

**A Place on the Ice:**  
**the stories, images, and experiences**  
**that make New Zealand's**  
**Antarctica**

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## **Abstract**

The polar landscapes have, for a long time, held the imaginations of people around the world. These extreme and remote environments have shaped the hearts and minds not only of people who have lived there, but also those who have only heard stories and seen pictures of these far off lands of ice and sky and snow. This dissertation examines the sense of place developed by New Zealanders towards Antarctica, across a spectrum of experiences with the continent, from seasonal workers and scientists, to people who have only ever seen it in books or advertisements. Taking a mainly phenomenological approach, the main objective of the research is to generate a theoretical base on what sense of place is made with and how it is created in extreme and remote environments like Antarctica. After examining 30 questionnaires and 54 interviews, the data indicate that there is no one New Zealand sense of Antarctica; rather, they are as manifold and complex as the individuals consulted. Regardless of the many differences across the various groups, a common thread was found of Antarctica as a place of hope. A hope based on scientific discovery and collaboration, on resource potential and conserving wild spaces. Findings also helped to develop a theoretical model, which builds on the existing works of Tuan (1977), Sack (1997), and Gustafson (2001). Three important theoretical aspects were identified through the analysis, including the ideas of personal connection, narrative emplacement, and one's sense of identity. The theory contributes to the ongoing discussion of how people encounter and make sense of extreme and remote environments. Both the findings themselves and the theory behind them suggest that policy makers, communicators, and tourism operators be aware of their target audience, their cultural values and changing symbolism, in order to better communicate their intended message.



## **1.0 Introduction**

Sense of place is a fundamental part of our daily lives. It influences how we understand, relate to, and behave in or toward the environment around us. Our homes, neighbourhoods, and cities all have a distinctiveness that makes them unique to us depending on who we are and how we go about our lives there. However, beyond our everyday realm of experience lies a whole world of places not yet explored by each individual, yet open to them in other ways – through books, television, the internet, stories and even, advertisements. These can all influence the understanding or sense we have of places we have not been to ourselves. Before delving into the idea of sensing place, an understanding of the fundamental building blocks is required.

## **1.1 Sense of Place**

### **1.1.1 Place**

The idea of place is one with many dimensions. From a geographic location to a hub of relationships and social practices, place has been considered through many different lenses. Central to all of these various definitions and ideas is the simple fact that nothing can occur outside of place (Casey, 1997). However, it is this simple fact that makes place such a difficult, and fundamentally important, concept to define.

Cresswell (2004, p.51) presents place in three levels as identified throughout the history of the idea of place. The first level identifies place as *description*. Based on an ideographic approach commonly taken by regional geographers, place as description looks to identify the unique and distinctive characteristics of a location. The second level approaches place as *social construct*. While still focused on a particular location, there is a greater interest in the wider social processes which are important in forming the “particularity of places” (p.51). The third level examines the *phenomenology* of place. No longer focused on particular locations, this approach “seeks to define the essence of human existence as one that is necessarily and importantly ‘in-place’” (p.51). Each of these levels overlaps with another, creating a continuum of depth, rather than discrete points of observation. As Cresswell concludes, “[r]esearch at all three levels are (sic) important and necessary to understand the full complexity of the role of place in human

life” (p.51). Each has something it can contribute to the overall understanding of why place matters.

In *Place and Placelessness*, Relph (1967) examines place as the everyday and mundane landscapes of personal life. His approach is one focused on “phenomenological methods [. . .] proceed[ing] from an acceptance both of the wholeness and indivisibility of human experience, and of the fact that meaning defined by human intentions is central to all our existence” (p.6). Relph pushes past the notion of place as ‘location’, using the works of Heidegger (1927), Tuan (1971, 1974, 1974a, 1975, 1977, 1991, 1993), and Matoré (1966), who he quotes saying: “We do not grasp space only by our senses . . . we live in it, we project our personality into it, we are tied to it by emotional bonds; space is not just perceived . . . it is lived” (Relph, 1976, p.10). Relph advances this notion of lived experience to one based on “a chiaroscuro of setting, landscape, ritual, routine, other people, personal experiences, care and concern for home, and in the context of other places” (Relph, 1976, 29). Rather than producing universal theories and methodologies to describe and understand the fundamental idea of place, Relph instead states his purpose is simply to “explore place as a phenomenon of the geography of the lived-world of our everyday experiences” (p.6). This underlines his belief that place is a derivative of a lived space, imbued with meaning only through the accumulations of experiences of living.

Place is location, place is meaning, and place is experience. It is each of these and all of these. From where the best berries are found, to where one goes to work, to where one shared their first kiss. Simply put “[t]o be human is to live in a world that is filled with significant places” (Relph, 1976). Think back to when you first moved someplace new. The way the emptiness sounded against the blank walls of the house, the closed in feeling of being a stranger in a new neighbourhood. And think of how those feelings changed as you added pictures, furniture, books, things that left your mark on the space, as you moved through these spaces and accumulated memories and experiences, slowly painting the landscape with colour and care. As Relph (1976) posits, “[t]he foundations of geographical knowledge lie in the direct experiences and consciousness we have of the world we live in” (p.4). It is this phenomenological basis that drives much of humanist geography, especially in the study of place. Awareness of existing in space is something everyone experiences; however, it is how we experience those spaces that transform them

into places (Tuan, 1974). It is through personal history, cultural beliefs, and sensual experiences that a person imbues the spaces they inhabit and use with meaning, transforming them into places (Cresswell, 2004; Tuan, 1974; Eyles, 1985; Relph, 1976). It is in this same manner that the huge variety of places that exist in our world are produced (Tuan, 1974);

*The earth's surface is highly varied. Even a casual acquaintance with its physical geography and teeming life forms tells us as much. But the ways in which people perceive and evaluate that surface are far more varied. No two persons see the same reality. No two social groups make precisely the same evaluation of the environment.*

- Tuan, 1974 (5)

It is this variety that takes the idea of 'place' from the simple term used in daily communication to the phenomenological idea explored by so many, across so many disciplines (Cresswell, 2004).

### **1.1.2 Perception**

Central to any relationship with place is an understanding of how human beings receive information about the environment around them. In his book, *Sensuous Geographies: Body, Sense and Place* (1994), Rodaway explores the importance of the senses in perceiving the world we live in and creating a sense of the places within it. He explores sense as,

*both biologically grounded in the physical structure of the body and its relationship to its environment [...] and is conditioned by the technologies (machines, buildings, etc.) and cultural practices employed by human societies in a given place and time [...]. The 'reality' which a given culture accepts and perpetuates is closely related to the ways in which it defines sensuous experience and employs each of the senses in encountering and seeking to make sense of the environment.*

- p.145

Not only is the way our bodies are built important in perceiving the environment, but so, too, the social and cultural surroundings in which we are living.

The interface between environment and self is the body; with five different senses for collecting environmental information. Rodaway (1994) suggests that Western society has bifurcated these into two classes, with the “so-called cerebral senses, sight and hearing, [being] separated from [the] so-called bodily senses, such as touch and taste-smell” (p.148). These cerebral senses are often given priority in Western culture, with much of science and everyday life focusing on what they can tell us (ibid). Both sight and hearing are senses in which information can be gathered remotely, allowing the observer to feel removed from, and objective to, the stimulus. The haptic senses on the other hand, rely on an intimate relationship with the environment, where information is reliant on physical contact with, and even consumption of, a stimulus. Despite this cultural bifurcation of the senses, “the understanding is ultimately multisensual and emphasises inter-relationships between the sense organs, the body and the brain” (p.20). Our understanding of the world relies on the integration and synthesis of all incoming information. This suggests that if one persons' senses are tuned a little differently due to any number of things (e.g. height, restricted use of one or more senses, etc.), their understanding and perception of that environment may well be different from someone else's.

For Tuan, perception is strongly related to the personal preferences and the cultural and religious beliefs held by an individual. In his book *Topophilia* (1974), Tuan examines how place is ‘ingested’ into the human mind and processed there, maintaining throughout, the importance of emotion and involvement in the landscape in the development of place. The very definition he provides for the word topophilia, the books' title, is broadly “defined [ . . . ] to include all of the human being's affective ties with the material environment” (p.93). For Tuan, the creation of place is an act based on physical sensory, as well as cultural, social, and personal experiences and knowledge, resulting in a strong emotional bond. Tuan asserts that our cultural values begin to guide our environmental encounters early on, leading to both differences in sense capacities and to how we interpret the incoming information. He highlights the differences in perception due to sex, relationship to the environment, either as a visitor or resident, and culture. In some cultures, men and women play different roles. These distinct ways of interacting with an environment can result in different ways of seeing their surroundings, and

interpreting the environmental information they receive. Similarly, ones' relationship to the environment can shape perceptions due to vantage point. For the visitor, or tourist, "his perception is often a matter of using his eyes to compose pictures. The native, by contrast, has a complex attitude derived from his immersion in the totality of his environment" (p.63). Finally, cultural values can shape one's perceptions by guiding the interpretation and symbolism of certain aspects found in the environment. Tuan describes how cultural attitudes towards the mountain have changed over time, thus influencing peoples' perceptions of mountainous environments (p.70). Each of these cultural components help to define an individual's vantage point from which to view and interact with their environment. Rodaway (1994) too, espouses this by suggesting that "[t]he 'reality' which a given culture accepts and perpetuates is closely related to the ways in which it defines sensuous experience and employs each of the senses in encountering and seeking to make sense of the environment" (p.145). He goes on to conclude that although sensual geography constitutes the direct experience of an environment, it also must include more indirect experiences, mediated through technology and the arts.

### **1.1.3 Meaning**

Making sense of place goes beyond simply perceiving the various aspects of an environment; it also constitutes the meanings applied. In the literatures, there are two general modes of thought as to the role the environment plays in this process. The first sees place as a way of 'being-in-the-world'; the second sees place as a social construct. John Eyles and David Harvey are both strong proponents for the idea of social constructionism. In his book *Justice, Nature and the Geography of Difference* (1996) Harvey states: "Place, in whatever guise, is like space and time, a social construct. This is the baseline proposition from which I start. The only interesting question that can then be asked is: by what social process(es) is place constructed?" (p.291). Tuan, too, walks this line of social constructionist thought, suggesting "what begins as undifferentiated space becomes place when we endow it with value" (Tuan, 1977 p.6). However, this view is opposed in the increasing amount of literature focusing on the equal importance of the physical environment, as well as the social and cultural meanings used to create place.

Robert Sack is a strong advocate of this view, stating in his book *Homo Geographicus* (1997);

*Indeed, privileging the social in modern geography, and especially in the reductionist sense that 'everything is socially constructed,' does as much disservice to geographical analysis as a whole as has privileging the natural in the days of environmental determinism, or concentrating only on the mental or intellectual in some areas of humanistic geography.*

- Sack, 1997 (2)

Sack is not alone in suggesting the importance of the cultural, the intellectual, and the natural as conceptual equals in the creation of place. Relph believes “space is never empty but has content and substance that derive both from human intention and imagination and from the character of the space” (p.10). There are numerous papers devoted to supporting the part played by the physical environment on place creation (Stedman, 2003; Hidalgo and Hernandez, 2001; Williams and Harvey, 2001). Jackson pushes the debate further with the idea of *genius loci* suggested in his book *A Sense of Place, a Sense of Time* (1994), stating that sense of place “is an awkward and ambiguous modern translation of the Latin term *genius loci*. . . not so much the place itself as the guardian divinity of that place” (p.157). This ‘spirit of place’ then is present whether people are there or not and, although it may not influence everyone in the same manner, it will always influence people when they experience it, shaping the way in which they perceive and experience the place itself.

Another important influence on the creation of meaning in place, is the lens, or lenses, through which people encounter the environment. Greider and Garkovich (1994) present a model of place construction where “[c]ultural groups socially construct landscapes as reflections of themselves. In the process, the social, cultural and natural environments are meshed and become part of the shared symbols and beliefs of members of the groups” (p.8). The group identity thus shapes the way individuals interact with and understand an environment, reifying both the individual's membership and the group's beliefs. On the more individual level, Gustafson (2001b) identifies four underlying themes shaping how meaning is applied to place, calling them the dimensions of meaning. He identifies these as *distinction*, *valuation*, *continuity*, and *change*. *Distinction* refers to

the “categorization, ascription of similarities and differences” (p.13). Identifying both the unique features of a place, as well as any similarities with other places, distinction allows one to categorize the place. *Valuation* relies on each individual assessing an environment on the value it provides both for themselves, and any group to which they belong, or which they see as valuable. Meaningfulness can arise from both positive or negative valuations. *Continuity* refers to both the individual and the environment. Generally, individual continuity will arise when “places become connected to the life path of the individual through origin, length of residence, important events or life stages, or frequent visits” (p.13). Place-meaning becomes an important part of self-meaning. Continuity can also be more environment-based, through “place-based social relations, place as a historical environment and local traditions” (p.13). *Change*, the last dimension, refers to the importance of place as a process. Both individuals and environments change, and are changed, over time, leading to a meaning that is always evolving. Finally, Thrift (1996) brings the idea of individual and group meaning together in his exploration of place meaning as *context*. For him, context is a “performative social situation, a plural event which is more or less spatially extensive and more or less temporally specific [...] a parcel of socially constructed time-space” (p.41). Similar to Greider and Garkovich, Thrift identifies group dynamics as an important factor in ascribing place-meaning. But he also sees the importance of the individual, albeit a socially created one, as a performer within that situation; one who is limited in how they can know a place “because of the way human subjects are embodied as beings in time-space, because of our positioning in social relations, and because there are numerous perspectives on, and metaphors of, what even counts as knowledge or, more precisely, knowledges” (p.32). The meaning we attribute to a place is strongly reliant on who we are as individuals; the group, or groups, with which we identify; as well as those groups to which we connect the environment.

#### **1.1.4 What is sense of place?**

Throughout the previous sections the idea of ‘place’ has been presented as a term connoting a space filled with meaning; meaning accrued through personal experiences, cultural background, and the physical setting itself. The next question then is ‘what is sense of place’? Much of what has been presented earlier applies to sense of place.

However, a distinction does need to be made in order to ensure a complete understanding of this theoretical background.

One of the fundamental tenants of sense of place theory is the idea that sense of place is an ongoing process. Camus (1959) described sense of place as “not just something that people know and feel, it is something people do” (p.88). It is in constant flux, along with the social, intellectual, and cultural beliefs our society follows; a sense of place can never be complete or final. Robert Hay associates “the development of sense of place” with “residential status” (1998). His paper *Sense of place in developmental context* (1998) considers sense of place along a “developmental continuum” in three separate realms: length of stay within a place, age of the respondent, and development of an “adult pair bond”. Each of these constitutes a continuum along which place attachment develops, leading eventually to sense of place. This suggests that for Hay, sense of place is developed over an extended period of time and through a number of different events or interactions with the place. For Eyles:

*Sense of place is [ . . . ] taken to mean more than the (positive or negative) ‘feel’ for a place or places which is based on the individual’s experiences of those places. It is also seen as being derived from the totality of an individual’s life. Place and sense of place are not regarded as independent phenomena divorced from this totality. They are fully integrated within it.*

- Eyles, 1985 (2)

Eyles suggests here that sense of place comes from the idea of a place, except that sense of place is shaped by the entire life experiences leading up to, and presumably following, the experience of the place in question. Personal identity is pulled into play, not only in influencing the way a place is viewed, but also shaping how a person views themselves in return, in relation to that place, as well as to the world (Eyles, 1985).

On the other end of the spectrum from Hay and Eyles, Basso (1996) explores the importance of the minutia in understanding sense of place. He refers to the “other ‘senses’ [ . . . ] invented for mankind (the aesthetic sense, the erotic sense, common sense, etc.)” (p.84) as similarly created terms to deal with remarkably intricate sets of “particulars – the visible particulars of local topographies, the personal particulars of biographical associations, and the notional particulars of socially given systems of thought” (ibid). He



emphasises the last ‘particular’ as the one least explored by writers on place as it is the most difficult to find and understand. Basso also emphasises its importance in a full and complete understanding of sense of place, as

*You can no more imagine an Apache sense of place without some notion of Old Man Owl, smooth minds, and what occurred at Grasshoppers Piled Up Across than you can fancy a native New Yorker’s sense of place without comparable ideas of Woody Allen, subway rush hours, and strolling in Central Park on the first warm day of spring. Everything, or almost everything hinges on the particulars*

- Basso, 1996 p.84

In order to understand a sense of place held by a person or a people, one must look at the basic things or ‘particulars’ that make up their worldview, their way of seeing and sensing their surroundings. For Basso, it is the fundamental things in our lives that drive our way of connecting with the world around us. Therefore “for any sense of place, the pivotal question is not where it comes from, or even how it gets formed, but what, so to speak, it is made with” (Basso, 1996 p.84); the ingredients that have gone into making this sense of place.

These two apparently divergent approaches to sense of place are both integral to how sense of place is viewed in this work. It is at once about the minutia that goes into it and the overall process that leads to its creation. Sense of place is a relationship between an individual and an environment; it is about identity and encounter. It is the organised cohesion of everything into the meaning we hold for a place. As Shamai (1991) states, “[s]ense of place consists of knowledge, belonging, attachment, and commitment to a place or part of it. [...] The essence of sense of place lie's in the beholders senses and mind” (p.354).

## **1.2 Memory and Experience**

As a cognitive psychologist, David Canter explores the idea of cognition with relation to how we sense place, in his book *The Psychology of Place* (1977). Although he spends the majority of the book looking at research projects focused on building planning and design, the underlying thesis of his work comes through as how the cognitive

systems which we build in our minds influences our perceptions and understanding of the world around us (p.30). He works through different examples of how various research projects have shown the relationship between cognition and environment, highlighting the important role cognition plays in “facilitat[ing] our operation within places” (p.2). He approaches place cognition by first examining how individuals conceive of and use places, proceeds to explore how we can describe and share these ideas, and finally, finishes by discussing how multiple ideas of place can be amalgamated into one place.

In his examination of how individuals create their ideas of place, Canter identifies the importance of experience. He suggests that

*[b]y emphasising the all-embracing, multi-faceted qualities of environments, then, we add weight to the argument being developed, that we will only discern the role of our physical surroundings in the matrix of human experience and activity, by studying how we react to and cope with the complexity and variety of those surroundings.*

- Canter, 1977 (10)

This statement is in agreement with many place academics (Camus, 1959; Relph, 1967; Tuan, 1974) and highlights the importance direct experience has in shaping how individuals conceive of place. Another important aspect Canter identifies in place creation, is the idea of individual perspective (p.36). This refers to both the variation in individuals due to preferences and purpose. A child will view a park differently to an adult, just as a businessman will view a train station differently than a conductor. Each individual will encounter and experience the same place differently due to the variation in place attributes to which they glean.

In the last chapter, on creating sense of place, Canter presents his final idea on how cognitive processes work towards the making of place. Here he states that “[o]ur view of the world, and our understanding of how it operates, grows out of the interactions which we ourselves have with it” (p.178). However, what if those experiences are not with the environment directly, but are instead mediated through another person or passed on through a variety of media? How would this influence the sort of place we created in our mind?

### 1.3 Imagination

The imagination is of extreme importance when we examine how sense of place is created for places not yet visited. Where direct personal experience is lacking with regards to a specific environment, imagination steps in. However, it is important to remember, as Ladd (1894) points out in his book, *Primer of Psychology*, the “imagination gets all its materials from actual past experiences” (p.134). This highlights the important role both personal experience and second-hand information play in the development of a sense of place for distant places.

In his presidential address to the American Association of Geographers in 1946, Wright refers to the idea of *terrae incognita*. He states early on that there are very few *truly* unknown or unexplored places on earth, but that this idea of *terrae incognita* refers instead to the personal knowledge and experience of each individual. This, then, is the role of the geographer. Wright describes the geographers call “to map the configuration of their domain and the distribution of the various phenomena that it contains, and set the perplexing riddle of putting together the parts to form a coherent conception of the whole” (p.2). In essence, a geographer’s job is to create an image of a place using the various pieces of information and data they collect. This image is then used by others to gain an understanding of the place in question. They are using this second-hand information and their own imagination to make sense of a place and transform it from *terrae incognita* to *terrae cognita*.

This is particularly applicable to Antarctica, where visitor numbers are low. Only about 40,000 people visit Antarctica each year (COMNAP, 2006; IAATO, 2011). These numbers include tourists, travelers, researchers and base staff, all of whom encounter Antarctica in different ways. Not only are their encounters different due to circumstances, but “[n]o matter how directly or fully [they] encounter a given perceptual object or event and no matter how optimal the conditions of perceiving at the time, no single perception can take in all of its aspects. There is always more to be seen, as well as more ways in which to see what has already been seen” (Casey, 1976, p.170). Upon their return to their homes, these people share their stories and experiences with their friends and family, shaping how those without direct experience perceive and understand the continent. Dunlap (1999) explains how

*[w]e can imagine hiking in a forest that does not exist by extrapolating from our experiences of hiking in those that do. We have all seen the stars in the night sky, watched and listened to birds, frogs, and insects, run our hands over rocks and trees, felt the breeze on our skin and the ground under our feet, and smelled woods, swamps, streams, and dust.*

- p.12

Using past experience and knowledge, individuals with no direct experience can patch together an image of Antarctica based on the stories of their friends and family members.

## **1.4 Wilderness**

Another important idea to explore with regards to sense of place in Antarctica is that of wilderness. Throughout history, many extreme and unusual environments have been referred to as wildernesses. And as the human relationship to the unknown has evolved, so, too, has the idea of wilderness.

Wilderness originates in the English word ‘will’, specifically the “meaning of self-willed, wilful, or uncontrollable. From ‘willed’ came the adjective ‘wild’ used to convey the idea of being lost, unruly, disordered, or confused” (Nash, 1982, p.1). This was later placed alongside the Old English word for animal, “dēor”, to make wilddēor, or wild animal (Collins English Dictionary, 2009). The –ness was later added to make the term wilderness or ‘place of wild animals’. And while the term is often associated with forests and woods, it first gained wide recognition in its use in the first English translation of the Latin Bible, where it was used in reference to the uninhabited deserts of the Near East (Nash, 1982). From this frightening Godless expanse, wilderness was transformed into the sublime and awesome vistas of the New World, where man could come as close to encountering Eden as ever before (Cronon, 1996). Finally, in the most recent iteration, wilderness has become a hotly contested term in the literature (Kliskey and Kearsley, 1993; Cronon, 1996; Hays, 1996; Waller, 1998). Cronon (1996) suggests that modern Western ideas of wilderness arise nominally from nineteenth century Britain. Based largely around the two concepts of the sublime and the frontier, he defines wilderness as an “island in the polluted sea of urban-industrial modernity, the one place we can turn for escape from our own too-muchness” (p.7). Cronon laments the apparent “dualistic vision

in which the human is entirely outside the natural” (p.17). He argues that this, historically based, either/or perception has led to the removal of humans from nature causing a dangerous schism which “privilege[s] some parts of nature at the expense of others” (p.22), most notably the pristine, untouched tracts over the more local nature within and around human centres. This is strongly contested by both Hays (1996) and Waller (1998). Hays (1996) argues that “most wilderness engagement does not look toward some remote area, but towards the area of one's personal experience – my backyard” (p.30). He also suggests that most people view wilderness not as pristine and romantic space, but as a destination for recreation and engagement. Waller (1998) also disputes Cronon's assertions that “our artificial and now outmoded notions of wilderness have become a cultural liability by obscuring what should be a substantial debate regarding how better to mesh our human culture and activities with natural environments” (p.540). Instead, Waller argues that “our concepts of wilderness are currently undergoing a remarkable reformation to encompass a broader set of values and processes and that this broadening is likely to increase rather than diminish the importance of wilderness in future land-use debates” (p.542). He asserts that Western society, with its scientific grounding, has also begun to value wilderness for its ecological importance in our planet's overall health. This is evident in the transformation of conservation moving “away from its historical job of preserving the best remaining natural habitats to encompass the broader work of managing and restoring a broad spectrum of natural communities” (p.563).

The idea of wilderness has also been explored on the more personal level. Williams and Harvey (2001) examined transcendental experiences in forest environments and found that these experiences varied “on three major dimensions: fascination, novelty and compatibility” (p.249). Haluza-Delay (2001) followed participants on a multi-day wilderness program and explored their perceptions of wilderness through observation and personal inquiry. His findings are complicated, at once suggesting that the experience only furthers the participants belief in a human/nature dichotomy, yet also increases their feelings “of connectedness to the natural world” (p.48). He suggests that “learning to look at small wonders – instead of just the spectacular scenes and pristine expressions of nature – would go a long way toward alerting participants that nature at home could be a source of the powerful feelings generated in wilderness settings”(p.48). Wray et al. (2010)

explored meanings of wilderness in a New Zealand context and the problems that “local” and “visitor” users can encounter due to different values and beliefs. They found the “domestic wilderness recreationists in Fiordland National Park object to increasing international tourism because they believe that such tourists are fundamentally different from themselves and that their presence poses a threat to locals’ sense of identity and place” (p.286). The findings emphasise the importance the natural environment plays in New Zealanders’ sense of national identity.

Wilderness has a range of meanings. It is after all, a human term founded on the ideas of confusion and disorder. The manner in which different individuals understand and interpret wilderness will most certainly influence how they relate to their surroundings.

#### **1.4.1 Extreme and Unusual Places**

Some of the most well recognised wildernesses could also be classed as extreme and unusual environments. From the deep ocean, to outer space, to the frozen depths of Antarctica, these are all places that are physically different from those we are used to encountering on a daily basis. Tuan (1993) asserts that the draw many individuals feel toward these sorts of places comes from the “longing to be taken out of oneself and one's habitual world into something vast, overpowering, and indifferent.[...] Conflicting emotions, including fear, are aroused and simultaneously absorbed or taken over by the overmastering presence of nature” (p.155). He suggests that for many, these extreme and unusual environments bring one closer to death, and in the process bring them closer to understanding life.

Taking a more positivistic approach, Suedfeld explores the psychological experience of being in Antarctica and other extreme and unusual environments (Suedfeld, 1987; --, 1998; Suedfeld and Steel, 2000). His work suggests that the physical experience of an extreme and unusual environment plays an important role in shaping an individual’s perception of that environment. However, David Canter, a cognitive psychologist who also explores the role of experience in sense of place creation, also postulates that it is from “the mixture of memories, habits and expectations with which we link” (Canter, 1977) a place that a sense of that place comes. This suggests, and is supported later on in

his book, that a sense of place, no matter how extreme or unusual, can be created through the stories and experiences of others. Through the collection of 'second-hand' information and the application of imagination, individuals can garner a personal sense of what a distant place means to them.

#### **1.4.2 Sense of place and Antarctica**

There is little published specifically on sense of place and Antarctica. There are, however, numerous publications on how people, specifically artists, have responded to spending time there (Manhire, 2001; Potten and Green, 2003; Pyne, 1986; Wheeler, 1997; Roberts, 2008; Fox, 2005). Ranging from personal reflection in essay form to photographs and poems, these publications all provide a unique source of information on how certain people have actively encountered the Ice. There is also a relatively small collection of articles that examine various parts of the relationship between Antarctica and the various countries that study it (Kirby et al., 2001; Abbiss, 2003; Dodds and Yusoff, 2005; Collis and Stevens, 2007). Kirby et al., Abbiss, and Dodds and Yusoff focus on New Zealand and Antarctica, whereas Collis and Stevens examine Australian and American spaces, respectively.

Also of considerable interest is the work done by Peter Suedfeld, a professor of psychology at the University of British Columbia in Canada. His work on extreme and unusual environments looks at how individuals respond psychologically to being in environmental conditions such as those found in Antarctica (1987).

This body of work, although quite varied, provides a good background on which to base research into the construction of sense of place in Antarctica. They all deal with the human encounter with this remote and extreme environment.

### **1.5 New Zealand and Antarctica**

In order to place this research in context it is important to outline the current relationship between New Zealand and Antarctica. This includes physical proximity, territorial claim, and the general cultural and historical connections between the two.

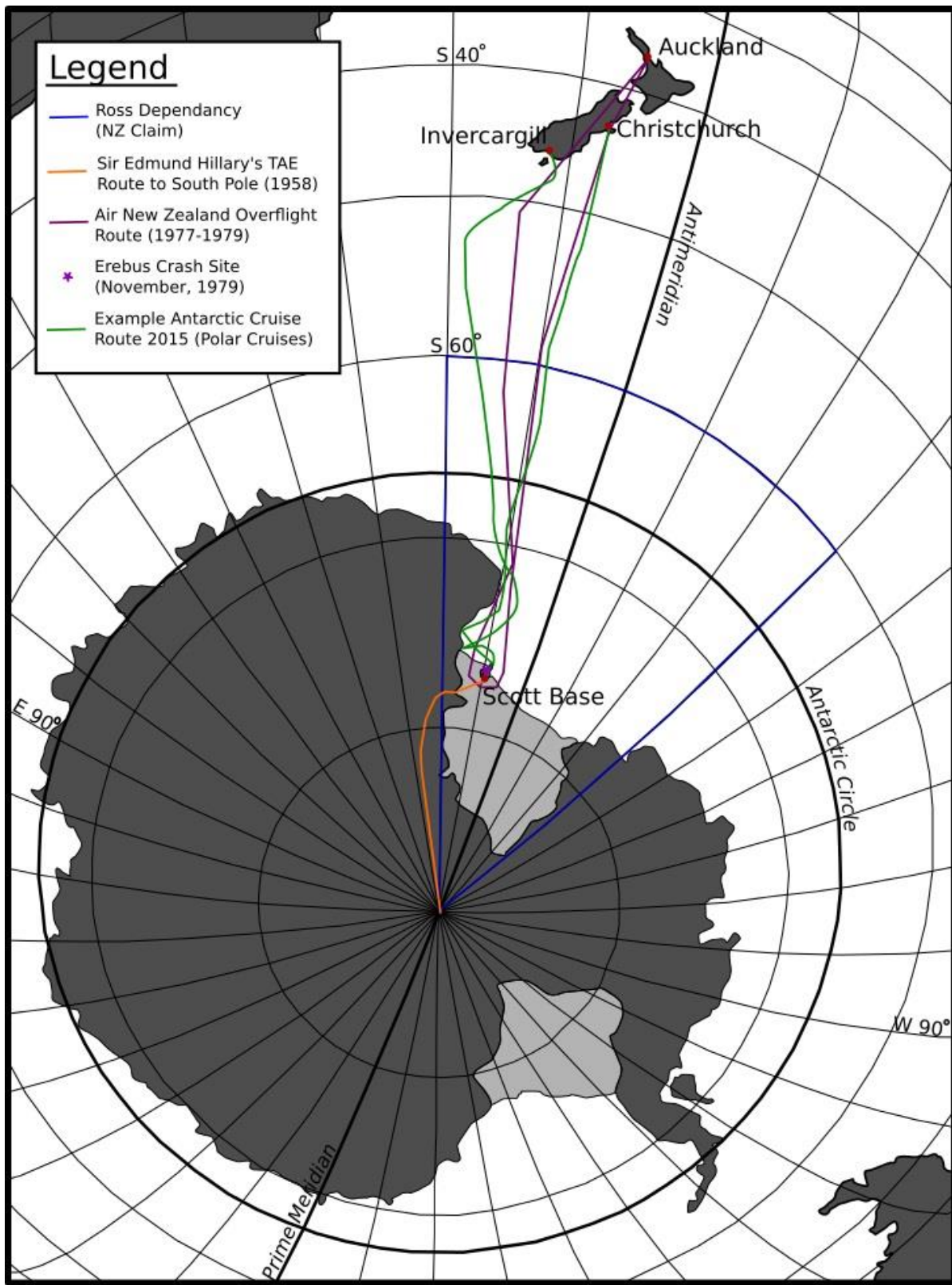
New Zealand maintains a year-round scientific base, Scott Base, on Ross Island in Antarctica. This is located 3932km south of Christchurch, New Zealand and lies on the

edge of the Ross Ice Shelf in the Ross Sea (Figure 1.1). The base is serviced by air from Christchurch with the help of the United States Antarctic Programme, which maintains a base 3km from Scott Base on Ross Island. Scott Base is active year-round and supports a diverse array of scientific projects in conjunction with numerous universities and organisations around the world.

Beyond the scientific programme, there are numerous other connections between New Zealand and Antarctica. These include both historic and current links from a broad spectrum of sources including resource extraction, exploration, and tourism. Historically, Port Chalmers in Dunedin was used as a staging point for sealers and whalers and explorers who were headed south. Later on, Port Lyttelton also became an important staging point for explorers like Shackleton and Scott, for both stocking up on supplies and training dogs for their expeditions (Ministry for Culture and Heritage, 2013a). Some of the sailors who traveled with these explorers were also New Zealanders, including the well-known Frank Worsley, who captained Shackleton's *Endurance* and later navigating a small rescue boat to South Georgia Island.

More recent links between New Zealand and Antarctica include Sir Edmund Hillary who drove his Massey Ferguson tractor to the South Pole in 1957-1958, beating the leader of the expedition, Sir Vivian Fuchs. This was followed by the signing of the Antarctic Treaty in 1959 along with eleven other countries then involved with science in Antarctica (Secretariat of the Antarctic Treaty, 2011). While New Zealand and six other countries held territorial claims, the treaty sought to put these aside in the interest of international co-operation and partnership. The treaty now has 50 signatory Parties and plays a role in shaping the current collaboration which separates Antarctic governance from the rest of the world. Other current links focus on tourism opportunities and incidents such as the Air New Zealand overflights offered in the late-1970s. These ended in 1979 when one of their flights crashed into Mount Erebus on Ross Island killing all 257 people on board (Ministry for Culture and Heritage, 2013b). There are now numerous cruise options leaving from New Zealand to explore both the Ross Sea and Sub-Antarctic Islands (Heritage Expeditions, 2014; Polar Cruises, 2014). Some of these also call into Scott Base. Finally, Antarctica is often referred to in conjunction with cold, blustery weather hitting New Zealand in the winter.





Map created by Erin Neufeld 2014

Figure 1.1 New Zealand connections with Antarctica from the mid-20<sup>th</sup> Century.

For those who get to go down to Antarctica as part of the Antarctica New Zealand programme, there are a number of things that make the encounter different from other bases. Scott Base is a smaller base, with a limit of 85 people on base at any one time. There is a range of recreational equipment available for use and there is relatively free access to outside depending on the weather (Antarctica New Zealand, 2014). This is in contrast to the tight safety measures in place at larger bases like McMurdo where trips off base are heavily restricted. The compact structure and size of the base also ensures there is a high opportunity, and necessity, for meeting and socialising with the others on base; students, artists, staff, and scientists from a range of fields. While this can lead to unique collaboration, it also simply allows people to meet individuals they would not otherwise encounter.

## **1.6 Thesis Aims and Structure**

This thesis explores the ideas of experience and imagination in the creation of sense of place, relating particularly to extreme and unusual environments like Antarctica. The aims of my research are two-fold. First, it is to understand the role that experience plays in the development of sense of place. This is done through the development of theory relating experience and imagination to sense of place. Second, to further the understanding of how Antarctica fits within the New Zealand psyche. This is explored through the analysis of questionnaires and interviews conducted with a sample of New Zealand residents from a variety of backgrounds.

The overall aim of this research is to investigate New Zealanders' senses of Antarctica. This question is explored in a variety of sub-questions focusing on the different aspects of the research. The first of these is whether New Zealanders with different modes of experience and connection with Antarctica have different senses of place. As part of this, I ask what factors shape a person's sense of place? These questions explore the role of experience on constructing sense of place, including the role the physical environment might or might not play. Also of interest to the overall question is whether this sense of place towards Antarctica is related to New Zealander's national identity. This question explores the idea of territorial claims in Antarctica and how this may influence peoples' sense of place towards Antarctica.

The thesis is divided into five sections. Chapter One, the introduction, provides a discussion of the current literature. This provides the context within which this research falls. It also identifies the gaps in the current knowledge and presents the research questions guiding the work. Chapter Two presents a theoretical background to the research, outlining the broad groundings from which sense of place theory arises. Chapter Three described the method used throughout this research. It goes over the author's personal influence and phenomenological approach, the procedures used in the application of both the questionnaires and interviews, and the application of certain aspects taken from grounded theory. This chapter concludes with an explanation of the constraints that shape the research. Chapters Four and Five present the results from the questionnaire and interview groups respectively. Each separate questionnaire and interview is treated as a case study and the themes and trends present in them are described here. Chapter Six provides a discussion of these themes and trends, both in terms of the theoretical application and the practical application of these theoretical lessons. It is in this section that the theory for sense of place development in remote and unusual environments is presented. The thesis concludes with a synthesis of the findings which discusses the overall lessons to be taken from this research and suggests some directions for future research.

## **2.0 Theoretical Groundings**

“It is not on any map: true places never are.” – Herman Melville, 1851

### **2.1 Understanding Place**

The idea of place is an issue with which thinkers throughout the ages have grappled. From the early Greek philosophers, like Aristotle, through to late-18<sup>th</sup> Century – early-19<sup>th</sup> Century thinkers like Kant and Heidegger, to the present day where it is a question explored in many different fields from architecture to sociology. Although many of these thinkers develop their own models to explain how place is constructed, they more often refer to each other’s work in doing so. Our understanding of place is an on-going investigation. Key models from different fields of place research are examined below, finishing with ideas for a new model based on the literature.

#### **2.1.1 Philosophy**

Of all the disciplines, philosophy has the longest history in exploring the idea of place. From the writings of Aristotle on the idea of *en topōi*, or being ‘in a place’, and his thoughts on receptive containment (Morison, 2002, p.57), through to Heidegger and his development of *Dasein*, or person and being-in-the-world, there has been an ever evolving philosophical exploration of place and our relationship to it.

Heidegger, while not having any specific theory on place creation, writes about how humans exist in the world around them and is consistently referred back to by those examining sense of place. In his work *Being and Time* (1927, translated Macquarrie and Robinson, 1967), Heidegger uses the term *Dasein* to refer to beings which have the possibility of inquiring as to their own existence (1967, p.27). *Dasein* exist in the *world*, a term for which Heidegger distinguishes four types to differentiate their respective meanings. Of the four, it is the first and third which are applicable to studying sense of place. Heidegger’s first concept of world defines it as signifying “the totality of those entities which can be present-at-hand within the world” (1967, p.93). This encompasses everything around us; it is the universe at large. The third concept of world refers to the place “‘*wherein*’ a factual *Dasein* as such can be said to ‘live’” (1967, p.93). This is the lived-in-world of the *Dasein*, those objects and spaces which are encountered and

experienced every day. It is the latter term to which Heidegger refers when he goes on to develop his idea of being-in-the-world. He outlines what it is to be in and provides a list of examples from producing something to making use of something, from considering to determining. The fundamental idea underwriting all of these of being-in is that of 'concern' (*Besorgen*), derived from 'care' (*Sorge*). For Heidegger, the Dasein is not indifferent to his surroundings and the objects within; they matter, and his actions are thus suffused with care (Blattner, 2006). So, our most basic experiences of ourselves in the world are permeated "with mineness and mattering: you experience your life as yours, and that means that it matters to you (is an issue for you) who you are" (Blattner, 2006, p.48). Heidegger moves on to explore how Dasein use their surroundings and the equipment within them. It is this equipment, or "something in-order-to" (1967, p.97), and their arrangement that create a specific environment, or place. Ultimately though, the equipment, while there, is not necessarily *present* in ones' experience of place;

*The peculiarity of what is proximally ready-to-hand is that, in its readiness-to-hand, it must, as it were, withdraw in order to be ready-to-hand quite authentically. That with which our everyday dealings proximally dwell is not the tools themselves. On the contrary, that with which we concern ourselves primarily is the work – that which is to be produced at the time; and this is accordingly ready-to-hand too. The work bears with it that referential totality within which the equipment is encountered.*

- Heidegger, 1927 translated Macquarrie and Robinson, 1967 p.99

For Heidegger then, our experience of place comes down to what we do in that environment and the tools we use to complete the work with which we are concerned. While he provides no outright model or theory on place construction, Heidegger applies Kant's transcendental philosophy to develop Husserl's phenomenological approach (Blattner, 2006) and establishes a strong foundation for future academics in exploring the creation of place as an experiential phenomenon.

A more recent philosopher is Casey, who presents Kant's discussion of the Archytian axiom which states "Whatever is, is somewhere and somewhen" (1997, p.204). This sums up Casey's primary belief that place is the first of all things and the coming

together of space and time as an event, or place. The idea of place as an event is an idea shared by many theoreticians, which allows for constant change and evolution in the story of place as people and time pass. Casey also focuses on the gathering that occurs in place, leading to the collection of bodies; thoughts, memories, features, and objects which make it unique. One of the important features gathered in place are bodies, these are the corporeal subjects “living in place through perception” (1997, p.235). This perceiving body exists in a place with operative intentionality, both eliciting and responding to the subject as it travels within and through the environment. There is an *interanimation* between the two, where the perceiving bodies both belong to the place, making it what it is, and depend on the place in their own creation of self (1997, p.24). While Casey has provided much theoretical background, there are no models to show the relationship between the gathering aspect of place and the bodies within them, or how these come together as an event.

Philosophy brings an important theoretical background and strength to the examination of sense of place, but it lacks any empirical support. Both Heidegger and Casey provide broad ideas based on personal reflection and academic discussion, but neither have examples of any real world studies which support their theories.

### **2.1.2 Human Geography**

Geography, while not as old a field as philosophy, has had the most varied look at the question of place. After the positivist movement converted geography from the regionalistic study that it was to the examination of geographical processes, human geography developed as a response. Human geographers hoped to return the focus of geography to the study of people in space, for as Tuan put it “formal geography is [...] a mirror for man – reflecting and revealing human nature and seeking order and meaning in the experiences that we have of the world” (1971, p.182). For human geographers then, it is impossible to remove human beings from the picture, making one of the fundamental questions driving their work that of sense of place – what it is and how it is created. The following authors provide some of the most well-cited models of sense of place.

Thrift is perhaps one of the earliest human geographers to deal with place and our sense of it. Building on Heidegger’s *being-in-the-world*, Thrift (1996) discusses the

fundamental aspects that shape his perspective. His examination of human subjects, objects, and context comes together to present a clear theory of how people interact with and perceive the environment around them. Human subjects gain and construct their understanding of the world around them through different means and methods in their everyday lives. This begins with the ceaseless flow of conduct, which is “future-oriented, non-deliberate, open, adaptable, orientation dependent, with the possibility of becoming deliberate if something interrupts [it]” (1996, p.37). This understanding is intrinsically corporeal and, through future-oriented, kinetic knowledge, can produce spatiality and temporality specific to that place. It is a joint action between subjects, coming from the ‘we’, not the ‘I’. Despite this inherent dialogue, a subject's understanding also comes from its situatedness and can only know the world from a specific perspective; their own. Finally, a subject's understanding of the world depends on their understanding of self, both influencing the other as they develop. Thrift views objects or things as tools through which subjects can extend and shape their comportment in the world, carrying meaning beyond that of “instrumental materialism” (Stafford quoted by Thrift, 1996,p.40). All of this exists within a context, which Thrift describes as the “performative social situation, a plural event which is more or less spatially extensive and more or less temporally specific [...], a parcel of socially constructed time-space” (p.41). The idea of time-space being constructed through social interaction leads to a strongly constructivist perspective. When discussing his epistemological approach, Thrift believes that there are limits of what can be known, imposed by multiple perspectives, social relations, and understandings of what constitutes knowledge at its basic level (1996, p.36). Ultimately, this results in a theoretical approach that leaves no place for the physical environment in understanding the world, except as a possible causal factor for a change in comportment or conduct. Thrift has a great dislike for “grand theories which abstract and decontextualize by extracting and then reapplying a set of principles from one set of practices to another” (Thrift, 1996, p.36). But while there are no specific models of theories of how human subjects understand place, Thrift did provide human geographers with a direct link to Heidegger's work on phenomenology and how it links into the study of place.

One of the most well-known writers on sense of place in human geography is Tuan (1971, 1974, 1974a, 1975, 1977, 1991 and 1993). He is a well-published author

with a strong phenomenological base who describes sense of place, or fields of care, as the emotional connection to a place created from prolonged experience within that place, connecting in with self-identity (1974, 1974a). The two major players in sense of place are the individual, who is affected by attitude, values, and culture, and the physical environment, also to some extent influenced by culture. As mentioned above, it is through extended personal experience that a sense of place is developed based on sensual perception of the environment and the application of meaning throughout. Although this model works for smaller, human-sized spaces, larger spaces are understood as “objects ‘presented’ to people as a representation of the identity of a place; this can be achieved by the simple visual prominence of a place to the evocative power of art, ceremony and rite, the latter of which can lead to the ‘falling’ of said place when cultural values change” (1977, p.177). While it might appear that personal experience is lacking in this latter example of sense of place development, Tuan does not state that this direct personal experience must be through total immersion in place. He suggests that a strong sense of place can develop through amassing experiences of place through other means, such as stories (1991). His models are theoretically based and further exploration of them using empirical research would strengthen their validity. Many of the later human geographers have altered and adapted Tuan’s model through empirical research and an evolving theoretical gaze.

For Relph, “[t]he essence of place lies in the largely unselfconscious intentionality that defines places as profound centres of human existence” (1976, p.43). It is the unintentional acting in place, or existential insideness, which brings place into being. As soon as an actor becomes aware of their actions with respect to their environment, they change the manner in which they interact with the environment and alter the essence of the place; much like quantum theory. The basic elements which go into making place for an individual include the purpose of being there, any attitudes held by the individual, the experience of the place itself and the intentions brought by the individual. The model provides an interesting look at what an individual might bring into sense of place, but this phenomenological approach is based on theorising alone, and makes no mention of the role the physical environment might play in forming sense of place.



Entrikin (1991) provides an interesting model (Figure 2.1) that attempts to broach the two seemingly disparate approaches to sense of place, the objective view of the positivists and the subjective view of the phenomenologists. Place is about 'betweenness' for Entrikin. It is found in the gap between actors IN place and theoreticians OUT/ABOVE place; it is the meeting of the external context of our actions and the centre of meaning. And, while his model may have little structure other than being 'between', Entrikin (1991) explains that

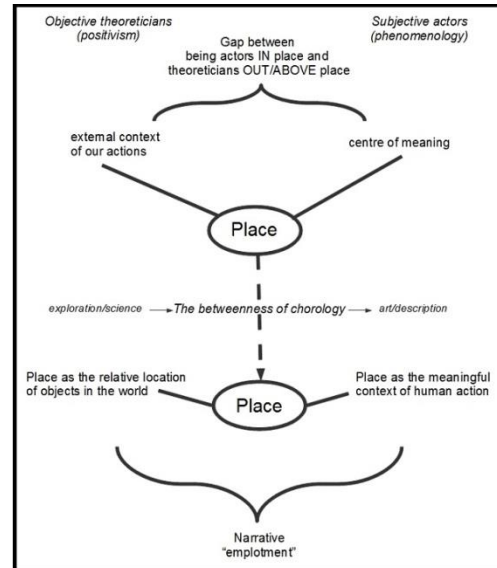


Figure 2.1 Place as 'betweenness' (Entrikin, 1991)

the way in which to communicate place is through 'emplotment' or narrative. Falling between a scientific explanation of relative location and an artistic description of the meaningful context for human actions, narrative allows for both aspects to be presented while also leaving room for temporal contextuality and individual identity to play a role in place creation and communication. He suggests that "[t]he geographical concept of place refers to the areal context of events, objects and actions. It is a context that includes natural elements and human constructions, both material and ideal" (1991, p.6). Despite lacking any real structure, the idea of place as narrative supports the creation of place by those who are not able to personally experience it.

One of the most important dimensions of place for Massey (1991) is the connections which link one place to another. For her, place is "constructed out of a particular constellation of social relations, meeting and weaving together at a particular locus" (p.69). Massey emphasises the linkages that are so essential to bringing a place into being, arguing that the common way of creating place through the drawing of boundaries, or identifying an 'us' and 'them', creates weak and temporally limited places. Instead, she suggests places be built around their connections, be they economic, cultural, historic, social, or political, focusing on the idea of 'place as process'. This results in places which are open to change and evolution, acting as strong, ongoing loci of people and events. Although this provides a unique and open model for place construction, it is

based purely on theoretical reasoning with no empirical support. It provides a broad suggestion for approaching individual places as a point of intersection, but has no further role for the physical environment, itself.

For Harvey, a political geographer, “[p]lace [...] is like space and time, a social construct. [...] The only interesting question that can [...] be asked is: by what social process(es) is place constructed?” (1996, p.293). Harvey sees places as social processes,

*...constructed and experienced as material ecological artifacts and intricate networks of social relations. They are the focus of the imaginary, of beliefs, longings, and desires. They are an intense focus of discursive activity, filled with symbolic and representational meanings, and they are a distinctive product of institutionalized social and political-economic power.*

- p.316

These ‘moments’, mentioned in the quote above, come together at specific points in time to create place. But place is more than this socio-spatial process, as it is also the locus of environmental qualities, where “sensuous interaction between body and environs carry psychic and social meaning”; of collective memory, where “preservation or construction of sense of place is an active moment in passage from memory to hope, from past to future”; of community, which links in with collective memory and focuses on belonging; and of being, which is “constructed from memories and affections through repeated encounters and complex associations” (1996, p.306). Each of these dimensions feeds into what Harvey calls the *genius loci* of place. This term encompasses each unique quality coming together to create a specific sense of place at that time. Harveys’ *genius loci* can

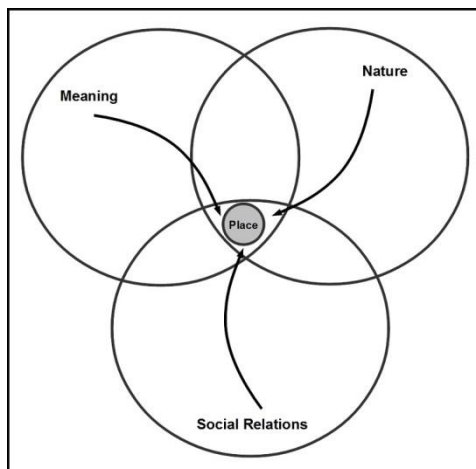


Figure 2.2 - Place as forces on the world (Sack, 1996).

change and evolve as environment, community and people change.

Sack describes place as “forces of the world” (1997). And similar to Gustafson (see Figure 2.3; self, other, environment; 2001) and Cronon (see Figure 2.4; people, social, environment; 1992), he creates a triangular model, identifying the three forces as nature, social relations, and meaning (Figure 2.2). These forces

are drawn as arrows pointing inwards to the place being created, and represent the strength or power exerted by each of the forces. The power exerted by each force varies between places and across time, allowing place to change and evolve. Circles are then drawn around each arrow, overlapping with each other creating a small triangle of interaction in the middle where place occurs. The circles indicate the relational qualities of the forces and their interdependence. Sack uses the term 'thickness' to describe the multiple perspectives and meanings present in a single place, where a place that is thick has many different layers to it, or uses for people, and a place that is thin is highly specialized and used for a single purpose. He goes further and describes how a change in thickness at one location can result in a change in thickness somewhere else. While Sack suggests a model with previous and ongoing development, his choice in forces is questionable, most notably his choice of 'nature'. In his book, he defines nature as a continuum with nature and culture at opposing ends. On the end furthest from cultural influence lies nature as uninfluenced by humans as possible, this nature is altered only by the "filters of our minds and symbolic systems" (p.80) which we rely on to understand it. It is here that nature becomes place and place transforms nature into "second" nature. This idea of "second" nature relies strongly on the cultural symbols and meanings we use in our social relationships to assign meaning, causing trouble separating the 'nature' force from the meaning and social relation forces.

For Hay (1986), place is a combination of context and the individual within that. Context has four main aspects, consisting of culture, society, community and the physical environment. These four aspects come together in one location to create the contextual environment in which sense of place is grounded. The individual has three influences: social belonging, ties to family, and length of residence. These relate to the depth of sense of place held by that individual. Hay develops this idea of residence in his later writings, exploring how length of time spent in a place influences development of sense of place (1998). He suggests that "[t]hose with more superficial connections to place, such as transients or tourists, do not develop the strong attachment that is often found among insiders raised in the place who remain there for most of their lifetimes" (1998, p.5). This is similar to the role of experience in creating sense of place, but it focuses only on the developmental role residency takes and not on the other aspects mentioned in his earlier

work. Further work could expand on these other aspects and result in a stronger model with greater empirical support.

### **2.1.3 Architecture**

Although architecture has not always been a separate academic field, the models below provide interesting depth to this survey. Both Manzo (2005) and Seamon (1980) view sense of place in a phenomenological sense; where place is constructed out of experience and use of the environment in question. As architects, this makes sense as their focus is on how humans use their surroundings.

Seamon (1980) focuses heavily on the interaction of person, environment and others in that environment, in what he calls, the 'place ballet'. Sense of place, then, "is a dynamic entity with an identity as distinct as the individual people and environmental elements comprising that place" (p.163). For Seamon, the place ballet is crafted from multiple body-ballets occurring in the same environment. These ballets are being carried out by the body-subject, which describes "the inherent capacity of the body to direct behaviours of the person intelligently and thus function as a special kind of subject which expresses itself in a pre-conscious way usually described by such words as 'automatic', 'habitual', 'involuntary', and 'mechanical'" (p.155). This is reminiscent of Relph's "existential insideness" where the place experienced is done so without deliberate or self-conscious reflection yet is full of meaning (1976). Seamon emphasises the importance of consciousness in these place-ballets and makes a distinction between lifeworld, the taken-for-granted pattern and context of everyday life, and epoché, the conscious disengagement from lifeworld to allow for reflection and observation.

While this appears as an interesting take on place, the focus on place as movement within space suggests that there is only ever one place at a time. Although it leaves room for change over time, it does not allow for a pluralistic or individual view of place. This is furthered by the absence of any individual interpretation or meaning on either specific movements, or anything else within the environment. Ultimately, the idea of "lifeworld" implies a necessary lack of conscious thought on the actions within the environment. Suggesting that the only way in which a 'true' place-ballet can take place is when the participants are expressing themselves in a "pre-conscious way". With

Seamon's focus on place in an architectural sense, one would expect a more explicit role for the physical environment. Instead, he seems to leave the role of the environment as a mere influence or guide for the overall movement within its' confines, never making it explicitly clear how that might occur.

Manzo (2005) takes much from Seamon's work, and expands on it to examine the inputs of personal experience in place. He identifies several characteristics of place-self interaction that shape our experience in place and thus our sense of place. These include safety/threat; bridges to the past; privacy, introspection and self-reflection; markers of life's journey; and a person's evolving identity. Although each place may not contain all of these, they highlight the fact "that both types of distinction [place and individual] are at work in our relationships to place" (p.82). Manzo notes that it is through repeated exposure that sense of place develops for the individual.

Despite both Seamon and Manzo come from the field of architecture, they approach place differently. Where Seamon focuses on the movement within the environment, Manzo highlights some of the underlying influences that might shape our experiences in place. Despite these differences they share certain weaknesses in the approach to place. They both leave little room for any role the physical environment might play in shaping sense of place – focusing instead on the people within those spaces. While both movement and experiences within space are important aspects in place creation, they are equally reliant and restricted by the physical environment in which they occur.

#### **2.1.4 Psychology**

The study of place in the realm of psychology has been a relatively recent phenomenon. Martin and del Bosque (2008), Auburn and Barnes (2006), and Stedman (2003) are all psychologists with an interest in place. Martin and del Bosque and Stedman both come at the question of place through the exploration of cognition, while Auburn and Barnes take a neo-Shutzian approach. The former base their models on empirical research, where the latter remains within the theoretical confines of Shutzian thought.

Stedman (2003) provides a psychological tri-pole model of place, with attitude, cognition and identity. He translates each of these as place satisfaction, knowledge of

place (or meaning of place) and place attachment, respectively. He also suggests a fourth, more distant link between attitude and identity: place protective behaviour. In his research on place (2002), Stedman found that an increase in place attachment, or a decrease in place satisfaction, both led to an increase in place protective behaviour. However, the one aspect which is of interest to this research - where meaning of place comes from - is absent from this paper. His 2003 paper on the physical environment and sense of place provides some further detail suggesting the same physical environment can have multiple meanings. But again, by providing participants with pre-determined meaning choices, Stedman may be missing out on other valuable meanings not already identified. Additionally, the isolation of meaning statements risks missing the context in which they were formed by each individual and thus whether they are in fact relevant to the study.

Auburn and Barnes (2006) put forward a neo-Shutzian model for sense of place. This is roughly explained as individual senses of place occurring within an environment of shared knowledge. These individual senses of place come together through shared perspectives and active encounters to create a sociality of place. Each physical location can have multiple meanings depending on the individuals involved, when they occurred and the knowledge shared. Place meaning is never fixed (both across participants and time), but only accomplished “for the social engagement at hand” (p.44). While their ideas support the plurality and temporality of place, they limit themselves by subsuming the physical environment under natural attitude and taking it for granted.

Martin and del Bosque (2008) veer somewhat from the track set before them and focus on the cognitive-affective nature of destination image creation. Through interviews conducted at destination sites, the authors took highly quantitative data from participants and from that created a model of the five basic characteristics of destination image: infrastructure/socioeconomic environment, natural environment, cultural environment, affective image, and atmosphere. Their data supports the idea that beliefs or knowledge about the characteristics or attributes of a place have more weight in the creation of destination image than the individuals feelings towards a place. Although this provides an interesting theory for place creation pre-departure, the data were gathered at the destination and personal experience may have already influenced the participants'

responses. Further work, with a more qualitative focus, might provide some relationships between the five individual characteristics identified in Martin and del Bosque's research and provide further context for their model.

### **2.1.5 Sociology**

Sociologists have also taken to the study of place creation in their explorations of society. While Gustafson (2001a, 2001b), Shamai (1991) and Greider and Garkovich (1994) all come from a background in sociology, their views on sense of place vary greatly. Despite this, they all support the idea of plurality of place, with a single location able to be different things for different people.

Shamai (1991) defines sense of place as the "feelings, attitudes, and behaviour towards a place which varies from person to person, and from one scale to another. Sense of place consists of knowledge, belonging, attachment, and commitment to a place or part of it" (p.354). He suggests a scale which denotes the levels of sense of place people develop based on the attributes mentioned above. The scale begins with not having any sense of place at all through the levels of knowledge, belonging, attachment, identity, and involvement, and ending with willingness to sacrifice for place. Shamai suggests that this scale can be applied across the different extents of place, from backyard to city to country. He emphasises the reciprocal nature of the human-environment relationship in sense of place and writes, "[t]he person gives place its meaning, but in return receives the place's meaning" (p.355). This statement suggests he places a connection between sense of place and sense of identity, seen when he describes the essence of sense of place as existing "in the beholder's senses and mind" (p.354).

Shamai's main purpose in this work is the creation of an empirical measurement of sense of place. However, he never clearly states his epistemological groundings, nor is it made clear in his writing. Although his title suggests a positivistic approach, he struggles with the difficulty of creating a model for sense of place – yet in the end, he comes up with the scale with which to examine the different levels of sense of place. This model suggests that sense of place is, in fact, something that can be measured according to personal connection and identity with place. He focuses on the personal side of the discussion, and while he states that the place can influence and shape a person, his scale

mentions only the human aspect of feelings towards place. It is a good start and a focused examination of the personal side of sense of place, but it struggles with other aspects mentioned by many other researchers, namely the social or cultural, and the environment.

Where Shamai focuses on the personal, Greider and Garkovich appear to favour the social in their exploration of the *Social Construction of Nature* (1994). Their theoretical approach to place suggests that “a sociocultural group constructs a landscape from nature and the environment through culturally meaningful symbols and then reifies it” (p.6). The meanings that are placed on the environment are chosen as reflections of sociocultural group identity. These symbols and meanings define proper and improper relationships between nature and man that reify the groups’ existence by supporting their beliefs.

Greider and Garkovich focus on the social aspect in place creation. While their theoretical construct allows for a variety of group interpretations of one place, it leaves little room for the individual differences between members of the same group. It also limits the role the physical environment plays to that which is interpreted through the cultural lens of interpretation. As social animals we are always viewing our surroundings through the various lenses and filters accumulated throughout our lives, but there is more to be said for the environment of a place than as a stimulus for our senses. The absence of environment is also made obvious through the omission of any mention of experience in place – this suggests an area for further expansion with the Greider and Garkovich theory.

Gustafson (2001a, 2001b) has a well-developed theoretical model with two parts. The first part of the model (Figure 2.3) outlines the three poles of place; self, other, and environment. While each of these poles support specific characteristics about place, the axes linking the poles also support several characteristics pertinent to place.

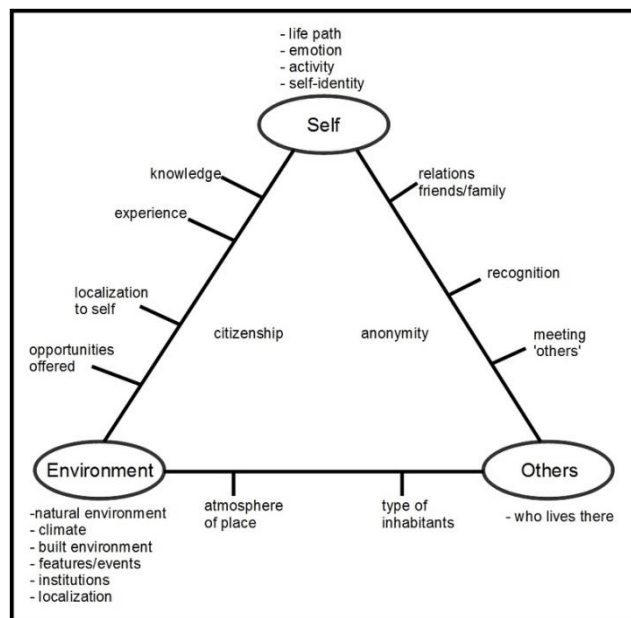


Figure 2.3 Gustafson’s tri-pole model (Gustafson, 2001b).



Gustafson also highlights the idea that, at a smaller scale, place is mostly based around self, whereas the larger scale place involves more environmental and others characteristics. The second part of the model is more specific to place-meaning. Gustafson outlines four dimensions of place-meaning; distinction, valuation, continuity and change. Each of these dimensions is broken down further to the base meanings associated with place. It is here that aspects of similarities and differences, positive or negative, historic environment and temporality come up. This model was created based on in-depth interviews with only 14 individuals selected using a strategic non-representative sampling method and further empirical support could lend this model validity. The field of psychology has the potential to provide greater refinement on the self pole of the model.

### **2.1.6 Environmental History**

A more recent field of study, environmental history focuses on place as a historically contingent phenomenon. Pred and Cronon both follow phenomenological routes in defining place. Place is constructed out of the meeting of people and events and is a historically contingent process unique in time, if not location.

For Pred (1984), it is the historical contextuality that is so important to his overall concept of place. Place is a “constantly becoming human product” (p.279) which contributes to history, is constantly changing and is shaped by the participant's existence within a structured society. This product of human interaction, while largely affected by the structuration theory of society, is also set within the limits of visible landscape features. However, this is the only mention of the physical environment, and the main thrust of his work focuses on the human processes behind the production of place. For Pred, place is defined by both social and individual factors, all occurring within a specific historic context of social norms and culturally driven beliefs and values. On the social side of place, there are the time- and space-specific activities unique to that place interacting with the specific power relations present then and there. The individual side of place includes the acting out of social and cultural forms, the formation of biographies and the transformation of nature – all of which influence and shape each other. Pred sums this up in defining sense of place as “not [...] something that stands on its own, but as a

phenomenon that is part of the becoming of individual consciousness” (p.292), making place inextricably tied up with identity and an ongoing phenomenon set within a specific historical context of social and cultural values, beliefs and norms.

This is an interesting theoretical definition, emphasising the importance of time in defining place. In fact, Pred argues that the historic contextuality of place is so important as to make empirical support for his framework impossible. He suggests, instead, that his framework should act as a guide for research direction and not as a theoretical frame on which to hang research findings. Pred’s definition of place also emphasises the human phenomenon of ‘becoming’, which integrates the individual and social well. However, it leaves the physical environment a minor role to play in place creation, as simply something to be transformed by human interaction. While the physical environment is transformed by our actions, it is also an influence on our actions.

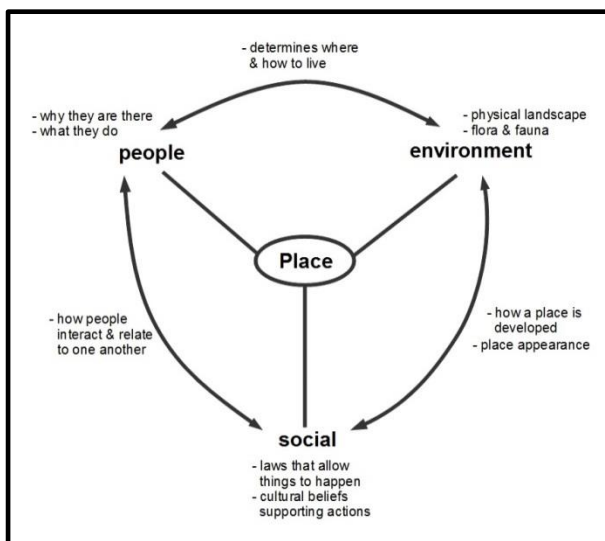


Figure 2.4 - Cronon's place model (Cronon,1992)

Cronon (1996) takes a different approach, and despite still emphasizing the continuing process of place creation, he focuses on the connections that make place. Cronon uses an abandoned mining town in Alaska as an example. He explains that to understand Kennecott, one must look at “the connections between this lonely place and the rest of the world – for only by walking those paths can we reconnect

this ghost community to the circumstances that created it” (p.33). He identifies three overarching characteristics of place that influence these connections, the people, the environment, and the social (Figure 2.4). Each of these has their own questions to examine and further the understanding of a specific place. For people, one might ask why they are here, or what they do here. For the social aspect, one can look at the laws which impact the development of place and how they influence the actions of people, or at the cultural beliefs that support or admonish certain behaviours in place. The environment shapes these human behaviours and actions through its physical form, its climate, and the

plants and animals found there. These three major factors also influence one another leading to the creation of a place that is unique both in place and in time – similar to Pred's assertion of historic contextuality.

One of the major issues with Cronon's theorising is the lack of thought put to the plurality of place. Although he does not discount it and his theory certainly could allow for it, he makes no mention of the differences in perception of place people might have. He instead seems to focus on there being a singular truth of place that is in continuing flux as time moves on, which people are only able to perceive in parts. This would seem to bridge the constructivist idea of place meaning being a purely human creation and the being-in-place idea of place holding some fundamental truth. Is place simply a collecting ground for these invisible links and connections, allowing the people who arrive there to pick up on those which they are aware of? As we learn more, we gain further connections and a more intricate web of connections is revealed to us. The physical surroundings would provide a specific environment in which these connections take shape and act, not only as a place of collection, but also as a place which shapes connections. Cronon's theory is at a larger scale, the scale of place as a whole, rather than the individual in that place. This raises the question as to how the two connect?

### **2.1.7 Tourism Management**

Tourism management, while a new field of research, draws on many of the previously mentioned models in its exploration of place. Prebensen(2007), Stowkowski (2002) and Ryan and Cave (2005) all look at place from the tourism management perspective. Similar to the work done in psychology by Martin and del Bosque, they focus on the destination image of tourists. Where Prebensen and Ryan and Cave take a positivist approach, Stowkowski examines place from a phenomenological perspective.

Stowkowski (2002) looks at sense of place as a social construction. Where place is "a resource and a repository of meaning, and a referent of their [the community and the people in it] identity" (p.373). Individuals can either narrate a place into being, such as a virtual world on the internet, or can narrate the environment they are in into being. So, "while an individual might develop a personal sense of place around a specific site, the 'social place' known and understood across sets of people is created and reproduced

through interpersonal interaction, formalised in social behaviour, and ultimately persists in collective memory” (p.372). This suggests that while individuals may have their own sense of a place, it is the social sense of place that is generally practiced and used. However, the individual can have some power in place creation, as it is an ongoing process, “always provisional and uncertain, and always capable of being discursively manipulated towards desired (individual or collective) ends” (p.368). In the end, though, “what is visible ‘on the ground’ at any given time is only the working out of one version of reality, promoted by a set of social actors who have succeeded in using their power and position to advance their own ideals” (p.380). Like many phenomenological approaches, this social creation of place leaves little room for the physical environment because it can simply arise from dialogue. However, this is a purely theoretical model and has no empirical support to date. Certain perspectives on the social nature of place may be useful for further theoretical development and empirical research.

Ryan and Cave (2005) take a more positivist approach with their examination of a qualitative development of destination image. They note that in a previous study done on Finnish lakes, Tuohino and Pitkanen (2004) state that “[a] pictorial image of landscape can originate a process that leads to an experience equivalent to that created by direct physical sensations” (p.143). Combining this research, with the work of Echtner and Ritchie (1991) on the characteristics of place image, Ryan and Cave come up with two underlying dimensions of destination image. These two dimensions range from exciting to relaxing and tense/frustrating to friendly. These axes cross to create a graph for plotting individual destination images on. Their research also found that

*[f]amiliarity has a role to place [...] in permitting more complex imaging.  
This implies that perceptual maps do not exist in isolation with reference to  
a specific place but need to be contextualized in a wider framework of  
experience, expectations, degrees of knowledge, culture, interests, and  
preferred activities*

- p.149

This is strongly reminiscent of the work of both Cronon and Massey on the importance of connections in defining sense of place. They argue that developing an overall model for a destination image would be impossible as place image models are specific to each place.

Prebensen (2007) tests an existing theory developed by Gunn (1972) which proposes a stage theory to destination image creation. Beginning with the organic image based on books, classroom lessons and stories, it moves on to induced image created by travel brochures, publicity and advertisements, and finishing with modified-induced image created through personal experience. Prebensen also calls on Gartner (1993) for a psychological look at how destination image is constructed; specifically, that cognition and affect both create place image and result in certain behaviours or actions (conation). This model is used by Prebensen to test Gunn's stage theory. However, she fails to outline how her work fits within Gartner's and provides few details on his model.

### **2.1.8 Art History**

Lippard is an art historian, examining place through her own experiences with it and art. She draws heavily on phenomenology in her explorations of place. For her, place is memory, history, experience and connections within space. Place is evocative, place is layered with histories and memories, place is a part of each person's life. Drawing mostly on the works of human geographers such as Denis Cosgrove and Yi-Fu Tuan, Lippard asserts that place must be encountered in a more than visual way, with all senses, in order to be transformed from mere observed landscape to sensed place.

Lippard's work raises an interesting conundrum: if sense of place can be created or garnered from a distance using 'second-hand sources' of information, then any definition of sense of place must fall within the constructivist notion. However, it is perhaps through further, sensual encounter that a deeper sense of place is established. This could, in effect, actually undermine the constructivist view. As Prebensen (2007; Gunn's stage theory of destination image and Gartner's place image theory) suggested, there is a difference between a sense of place created from pure imagination and one created with the help of memories. Lippard seems to differentiate the two, as landscape and place respectively. While she has no theoretical framework, her writing inspires thought and provides a fresh look at such a basic subject so often limited to academic debate.

## **2.2 Developing a new model**

The preceding section has outlined a number of different models on how place is constructed. Although there are many similarities both within fields and across them, there are also certain differences. By identifying the consistencies and drawing together the pieces from various models that work, a new framework will be developed to be applied to the data on Antarctic sense of place.

### **2.2.1 Differences**

Most notable amongst the differences is the positivist versus phenomenological approach to understanding place. While most of models took a phenomenological approach, a few were more positivistic with empirical support helping to guide their models. Those studying place from a positivist standing were not all from the same field, and no field was exclusive to the positivist approach. Positivism and phenomenology are not mutually exclusive, and a use of both would strengthen the model produced.

Another difference worth noting was the positioning of perspective of the model. The two main perspectives used were individual- or group-based and place-based. This refers to the fundamental base which the model is built on. The individual- or group-based model focuses on how sense of place is created for an individual or group and develops with them through experience and interaction (Gustafson, 2001; Stedman, 2002; Tuan, 1977; Relph, 1976; Greider and Garkovich, 1994; Hay, 1998; Martin and del Bosque, 2008; Manzo, 2005; Prebensen, 2007; Ryan and Cave, 2005; Shamai, 1991). The place-based model focuses on how sense of place is constructed over time in one place through human interaction and movement with the landscape. Rather than move with the individuals who pass through, it remains present in the environment (Heidegger, 1927; Lippard, 1997; Stowkowski, 2002; Auburn and Barnes, 2006; Harvey, 1996; Massey, 1991; Entrikin, 1991; Thrift, 1996; Seamon, 1979; Cronon, 1992; Casey, 1997; Sack, 1997; Pred, 1984). The place-based models were all developed through the phenomenological approach, while the individual-based models were predominately, though not all, developed through the positivist approach. Although the place-based model allows for models of interaction and connection, an individual-based model is

more highly testable, allows for development over time and experience, and can still incorporate connections and interaction through the inclusion of social or cultural aspects.

### 2.2.2 Similarities

One popular model appears to be based on a tri-axial frame. Gustafson (2001), Stedman (2002), Sack (1997), and Cronon (1992), all from different academic disciplines, have tri-axial models. This framework allows for the identification of three major aspects guiding sense of place. Gustafson (2001), Sack (1997), and Cronon (1992) all have similar axes consisting of self/meaning/people, others/social relations/social, and environment/people/social. Stedman (2002) takes a psychological approach with attitude, identity and cognition as his three axes. This provides a strong model for the aspects involved in shaping specific interactions for an individual.

Many of the models discuss the role of time in their conception of sense of place, either as an event, or phenomenon, embedded in time (Pred, 1984; Casey, 1997; Seamon, 1979; Thrift, 1996; Relph, 1976), or as an ever-evolving idea that changes as our experiences increase (Tuan, 1977; Harvey, 1996; Auburn and Barnes, 2006; Manzo, 2005; Stowkowski, 2002). The inclusion of time in the model will allow for both these aspects to be integrated and provide an attribute with which to observe any possible differences experience can cause. Entrikin (1991) suggests including time via the use of *narrative* as the best tool for communicating sense of place. This highlights the importance of progression and change in sense of place and allows for it to be communicated. Overall, it is clear that time is an important aspect in the development of sense of place, especially with regards to the role of experience.

The idea of connections, both inside place and to the outside, also shows up a few times in the models explored above (Seamon, 1979; Cronon, 1992; Massey, 1991; Lippard, 1997). These authors suggest that place is based on the unique connections that occur there. Ranging from interactions between people in place, to the variety of supply links necessary for the place to exist in the manner that it does, these connections occur in a uniquely individual way creating a unique sense of place for that location. The idea of connections is an interesting one to integrate, as they are at once the things which make a place unique, yet also what links a place to the rest of the world. Connections are

especially interesting with relation to those individuals who have not traveled to a place but perhaps have other connections via relatives or business.

Finally, the works of Martin and del Bosque (2008), Prebensen (2007) and Shamai (1991) all posit models which allow for sense of place without direct experience. The three models suggest that sense of place consists of cognitive and affective awareness of place, both of which can be attained from various sources, such as books, television, friends' stories and more. The affective side is further explored by Ryan and Cave (2005), who suggest that an increased familiarity with a place allows for a more complex conception of place. It is unclear as to whether this familiarity need include direct personal experience. As these models have not developed a similar framework on which to draw, their theories will be examined separately and integrated in the manner best suited to the overall functioning of the final model.

### 2.2.3 Proposed model

Sense of place is a relationship between a person and a place. The proposed model is therefore built around identity and encounter, individual and environment. Developed from the existing model Tuan presents in *Topophilia* (1974), the model (Figure 2.5)

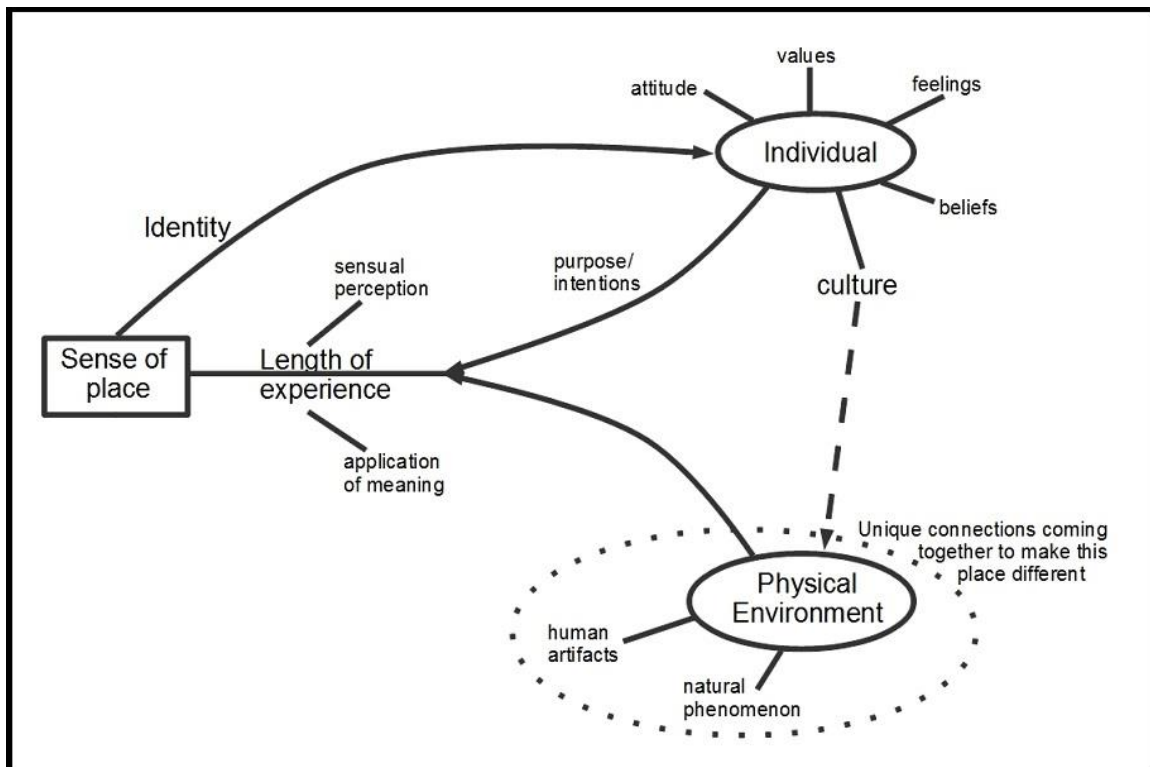


Figure 2.5 Proposed model showing sense of place development (adapted from Tuan, 1974).



focuses on the interaction between individual and environment with length of experience playing a fundamental role in the development of sense of place. It is during this experience, be it direct and personal or indirect and through others, that sensual perception takes in information and when meaning is applied to the place. The individual people within these places bring with them certain attitudes, beliefs, values and feelings, as well as a specific purpose or set of intentions which influence how they interact with and perceive their environment. Individuals are also influenced by cultural and social norms, as is the environment with which they are interacting, with cultural symbols and artifacts shaping the landscape.

The proposed model is for specific encounters with the environment. Each encounter has the potential to influence and shape the self-identity of the individual (Lippard, 1997; Shamai, 1991; Relph, 1976; Pred, 1984). This in turn will impact on future encounters both with the same environment and elsewhere. Each successive encounter with the same environment also has the potential to develop a thicker, more complex sense of place, with a greater variety of meanings which inter-relate and occur simultaneously (Ryan and Cave, 2005; Hay, 1998; Sack, 1997).

### **3.0 Methodology**

Exploring the experiences and perceptions people have of Antarctica is best accomplished using a phenomenological approach and a range of mixed-method tools. This allows for the full expression of context-rich and meaningful images and experiences that all contribute to the various participants' sense of Antarctica. Understanding New Zealanders senses of Antarctica were examined using a two-fold approach: first, by exploring the role of experience plays in the development of sense of place; and second, by looking at how Antarctica fits within the New Zealand sense of identity.

Understanding the role of experience in the development of sense of place was gained through contrasting and comparing senses of place, and examining the complexity of perceptions from participants with different experiences. These were collected through semi-structured interviews with a variety of individuals with a range of experiences with Antarctica to ensure certain consistent issues are discussed, but also to allow for context-rich narratives to emerge and the full meaning of participants' senses of place to be communicated (Punch, 2005). Narrative analysis of these interviews allowed for the locating of Antarctica within the New Zealand sense of identity.

This chapter will also discuss the paradigmatic groundings guiding this research design and approach. It demonstrates that a transactional world view, following an interpretivist-phenomenological approach, is suited for the exploration of sense of place towards Antarctica. This allows participant narratives to guide the development of contextually-based theory on sense of place development with relation to personal experience. The chapter also includes the specific constraints encountered in the conducting of the research and how these have been dealt with.

### **3.1 Paradigmatic positioning: finding a world view**

Just as Payne and Payne (2006) suggest, methodology examines not only the tools applied to a project, but also how those tools fit into the “grander scheme of ideas orienting [the] researchers' work” (p.151). This goes down to the very basic level of worldview and the ontological, and as such, epistemological beliefs held by the researcher, as it is these fundamental views which direct and shape the research at all

stages. By establishing the paradigm, or “basic belief system or worldview that [is] guid[ing] the investigator” (Guba and Lincoln, 1994, p.105), a greater understanding of how the conclusions were reached will provide increased credibility and validity.

This project has the unique benefit of a multidisciplinary approach, with both geography and psychology driving the inquiry. Although they may appear to differ a great deal, there are some rather strong similarities that bring them together. Human geography is “concerned with the spatial differentiation and organization of human activity and with human use of the physical environment” (Johnston, Gregory and Smith, 1994, p.259), while environmental psychology is “the study of human behavior and well-being in relation to the sociophysical environment” (Stokols and Altman, 1987, p.1). Each focuses on the relationship between person and place, making them the ideal groundings for this research.

World views commonly taken in environmental psychology are discussed by Stokols and Altman (1987). They suggest a taxonomy of world views including Trait, Interactional, Organismic and Transactional (Table 3.1), each one resulting “in different forms of inquiry, understanding, and theory” (p.36). Historically, the trait and interactional approaches have been popular in psychology (Stokols and Altman, 1987). However, the authors suggest that the transactional approach is “particularly relevant to environmental psychology, given the field’s intrinsic interest in holistic, changing aspects of person-environment relationships” (p.37). An examination of the units of analysis, how time and change are viewed, and the underlying philosophy of science held by each of these approaches will demonstrate why this is the case.

The trait world view examines “individuals or psychological processes as self-contained phenomena, with environments and contexts playing a secondary or supplementary role” (p.11). This world view breaks individuals or processes into constituent parts, uninfluenced by the social and environmental contexts within which they occur. As such, temporal influence is also given little attention, as the processes being studied are deemed to be unchanging and thus predictable. If change is to occur, it is already known and only occurs in a pre-determined manner. The trait world view treats

Table 3.1 General comparison of Trait, Interactional, Organismic, and Transactional world views (adapted from Stokols and Altman, 1987, p.12)

			Selected Goals and Philosophy of Science		
	Unit of Analysis	Time and Change	Causation	Observers	Other
<b>Trait</b>	Person, psychological qualities of persons.	Stable, infrequent change along developmental stages.	Cause internal to phenomenon.	Separate, objective, and detached; equivalent observations from all observers.	Seek universal laws; study predictions.
<b>Interactional</b>	Psychological qualities of person and social or physical environment are separate, some interaction between parts.	Change results from interactions of separate person and environment entities; time and change not intrinsic.	Antecedent-consequent relations, “push” ideas of causation.	Separate, objective, and detached; equivalent observations from all observers.	Focus on elements and relations between elements; seek laws of relations between variables and parts of system.
<b>Organismic</b>	Holistic entities composed of separate person and environment components, whose relations yield qualities more than the sum of their parts.	Change results from interactions of person and environment entities. Occurs along underlying regulatory mechanisms. Change irrelevant once ideal state achieved.	Teleology, “pull” toward ideal state.	Separate, objective, and detached; equivalent observations from all observers.	Focus on principles that govern the whole; identify principles and laws of whole system.
<b>Transactional</b>	Holistic entities composed of aspects, not separate parts or elements; aspects mutually defining.	Stability/change intrinsic and defining features of phenomenon; change occurs continuously; directions of change emergent.	Description and understanding of patterns, shapes, and form of phenomena.	Relative: observers are aspects of phenomena; different observers make different observations.	Focus on event; describe and understand patterning and forms of event; openness to emergent explanatory principles.

the observer as separate and outside the phenomenon being studied. This adherence to traditional scientific values extends to objectivity, replicability and the generalizability of the findings and subsequent theories. This world view is often used in the study of intelligence and aptitude in individuals (ibid).

The most commonly used approach in contemporary psychology has been that of the interactional world view (Stokols and Altman, 1987). This approach treats “psychological processes, environmental settings, and contextual factors as independently defined and operating entities” (p.15), which interact with one another. The studies

generally focus on linear interactions, with cause-and-effect type models created as a result. Both time and environment, are treated as separate, non-intrinsic, factors, which serve to locate and predict respectively. Time locates and describes the phenomena along the cause-and-effect continuum, while environments serve to predict what effect a cause might have. As a basic aspect of most modern psychological thinking, the interactional world view follows the traditional scientific values of objectivity, testability, generalizability, and replicability. This world view is particularly popular in environmental psychology and can be seen in environmental perception and cognition research, operant learning theory and environmental behaviour research, and territorial behaviour research (Stokols and Altman, 1987).

The organismic world view looks at psychology as “the study of dynamic and holistic psychological systems in which person and environment components exhibit complex reciprocal relationships and influences” (p.19). Research under this world view considers the basic unit of analysis to be the whole entity, which is deemed to possess unique characteristics not to be found in the separate parts that make up the whole (Stokols and Altman, 1987). The goal of organismic research is to discover the general and universal principles that drive human behaviour, with the belief that these laws are built on complex, multi-directional relationships between different parts of a whole. The organismic world view shares many of the values held by the interactional world view in creating objective, repeatable, and testable theories, with the major difference being in the belief that organismic systems move towards an ideal endpoint. This teleological state, once reached, would cause an organism to stop changing and simply maintain equilibrium. While it is less common in environmental psychology, examples of organismic world views can be seen in general systems theory, some models of crowding, and an analysis of transportation and human well-being (Stokols and Altman, 1987).

The transactional world view approaches psychology as “the study of the changing relations among psychological and environmental aspects of holistic unities. [...] The transactional whole is not composed of separate elements but is a *confluence* of inseparable factors that depend on one another for their very definition and meaning” (p.24). By its very definition, there is no focus placed on separate actors, instead it gives precedence to the dynamic relationships between actors. Relationships defined by the

specific actors involved, as well as the environmental and situational circumstances they are involved in (Stokols and Altman, 1987). A change in any of these factors would result in a different set of relationships. As such, “a transactional approach assumes that the *aspects* of a system, that is, person and context, coexist and jointly define one another and contribute to the meaning and nature of a holistic event” (p.24). Time and change are an intrinsic part of this world view and it is the transformation of the relationship itself that drives the research. Rather than generate universal theorems and laws, the transactional approach aims to consider events from multiple perspectives in order to appreciate “the variety of factors that contribute to the fabric of a phenomenon” (p.27), and understand the patterns these phenomena make. The transactional approach would appear ideal for environmental psychology with its focus on relationships (Stokols and Altman, 1987).

The social sciences approach the question of worldview from a different angle, suggesting three common paradigms; postpositivism, critical theory and interpretivism/constructionism (Table 3.2) (Willis, 2007; Guba and Lincoln, 1994). Because the social sciences have been considered one of the ‘soft’ sciences, due to their “imprecision and lack of dependability” (Guba and Lincoln, 1994, p.106), there has been pressure throughout history to emulate the objective and truth-finding nature of the natural sciences (Willis, 2007). In defiance of this push, human geography has moved from a postpositivist approach, within which most of the natural sciences work, towards critical theory (and other action-oriented, value laden approaches), and interpretivism/constructivism. The study of perceptions and sense of place is an area which could be explored from any of these paradigms.

The most basic aspect to examine has to do with the nature of reality, or how we perceive the world around us, and what we can know of it. While postpositivism assumes a *critical realist* perspective, with our world views only “imperfectly apprehendable because of flawed human intellectual mechanisms” (Guba and Lincoln, 1994, p. 110), interpretivism assumes a *relativist* perspective, which argues that our world views are socially constructed through interaction and experience. This does not mean interpretivists deny the existence of an external, physical reality; it simply means “they have difficulty with [...] the assertion that it is an independently knowable reality” (Willis, 2007, p.96). The socially constructed nature of perception extends from how

Table 3.2 Three common paradigms in social sciences today (adapted from Willis, 2007).

	<b>Postpositivist</b>	<b>Critical Theory</b>	<b>Interpretivist</b>
<b>Nature of reality</b>	Material and external to human mind	Material and external to human mind; value-laden	Socially constructed
<b>Purpose of research</b>	Find universals	Uncover local instances of universal power relationships and empower the oppressed	Reflect understanding
<b>Acceptable methods and data</b>	- Scientific method - Objective data	Subjective inquiry based on ideology and values; both quantitative and qualitative data are acceptable	Subjective and objective research methods acceptable
<b>Meaning of data</b>	- Falsification - Use of test theory	Interpreted through ideology; used to enlighten and emancipate	- Understanding is contextual - Universals are deemphasised
<b>Relationship of research to practice</b>	- Separate activities - Research guides practice	- Integrated activities - Research guides practice	- Integrated activities - Both guide and become the other

people interpret and understand their personal experiences in the physical world, to the ways in which individuals discuss and re-interpret their relationships to each other and the environment around them.

The second aspect which flows from this is that of ways of knowing, or epistemology. This includes how a researcher can come to understand their perspective, and how it has come to be. The interpretivist approach is *subjectivism*, the assertion that no research can be objective, as the act of research itself is not only “influenced and shaped by the pre-existing theories and world views of the researchers” (Willis, 2007, p.96), but the act itself adds to the construction and re-interpretation of the phenomenon being studied (Guba and Lincoln, 1994). This suggests the presence of multiple perspectives existing in parallel, none of which are “more or less ‘true’ but rather are more or less informed and/or sophisticated” (Racher and Robinson, 2002, p.469). Racher and Robinson (2002) point out that it is through multiple ways of knowing that the knowledge embedded in human experience can be discovered. Where positivism aims to find and support universal laws, interpretivism is far more local in that it aims to understand a specific phenomenon in context (Willis, 2007).

The third aspect has to do with how one investigates a perspective. Methodology is about more than the tools to be implemented; it is about the approach taken in using those tools and even which tools are appropriate for the job. As mentioned previously, context is an important consideration with interpretivism. Thus the practices and tools used in research and analysis maintain the *situatedness* of the knowledge provided. This most notably includes hermeneutical and dialectical practices. Guba and Lincoln (1994) propose that “the variable and personal (intramental) nature of social constructions suggests that individual constructions can be elicited and refined only through interaction *between and among* investigator and respondents” (p.111). The resultant array of constructs or narratives can then be analysed using a variety of techniques depending on the nature of the inquiry. One of the fundamental and most recognised approaches used by interpretivists is that of hermeneutics. This term refers to the study of meaning. Originally limited to documents and texts, it has evolved to encompass the meaning of human actions in context, as well (Willis, 2007). Another term pertinent to the study of meaning and experience is that of phenomenology. Willis (2007) defines it as “the study of people’s perception of the world (as opposed to trying to learn what ‘really is’ in the world)” (p.107). Evolving from the works of Husserl (1931), Heidegger (1927), and Merleau-Ponty (1945), contemporary phenomenology “seeks to understand the situated meanings of phenomena in the sense that such knowledge is to be understood within the specific environment or problem domain of the participant” (Caelli, 2000, p.371). By exploring participant’s sense of place towards an environment from a phenomenological approach, their narratives are situated within their own life-worlds and a better understanding of how certain meanings and perceptions come to exist can be gained.

Although environmental psychology and human geography have approached the paradigm question differently, they both deal with important issues in locating and guiding research. Identifying the world view from which one is working is integral to the overall validity of any research. This is especially true coming from a transactional world view, as this

*approach calls for the study of how observers in different 'locations' with differing characteristics and perspectives view and interpret the same event. Observers are, therefore, inseparable from phenomena, and their*



*role, perspective, and 'location' must be understood as an aspect of an event*

- Stokols and Altman, 1987, p.27

In order to understand the conclusions drawn, the reader must first understand the location from which the observations are being made.

The transactional world view, with its “emphasis on the molar physical environment in relation to human behavior” (ibid, p.29), shares many similarities to the interpretivist approach which “looks for understanding of a particular context” (Willis, 2007, p.98) and emphasises the *situatedness* of knowledge in conducting research. Both approaches prefer to examine their subjects holistically, recognizing the need to incorporate context in order to more fully understand any findings. Both transactional and interpretivist approaches acknowledge the role the observer plays in creating and shaping any findings they make simply by observing and studying them. And both approaches look to further understanding of phenomena rather than generate universal laws. As such, they also both value the study of phenomenology in elucidating the relationship between people and places. Phenomenology focuses “on understanding from the perspective of the person or persons being studied” (Willis, 2007, p.107), a technique that agrees with both the transactional and interpretivist world views.

### **3.1.1 Situated knowledge**

Another important aspect to consider is the situatedness of the researcher. Just as all the narratives from participants are partial and coming from a particular perspective, the research and analysis of these are also being conducted from a specific perspective (Rose, 1997; Cloke, Crang and Goodwin, 2005). By establishing my position as researcher, I endeavour to clarify how I have come to make certain choices in the course of my research and to make note of influences they may have on my interactions with participants.

Coming from a human geography background, I have certain authors, theories and methods that have guided and influenced how I have approached this research. The sense of place work done by Tuan, with his emphasis on personal experience and sensual perception instigated my interest in this research (1974, 1977). His was a rather

philosophical approach, often writing from past experience and observation rather than empirical experimentation. Basso, a cultural anthropologist who worked with the Western Apache, wrote about the importance of cultural contextuality and understanding the possibility of multiple approaches to reality (1996). Relph, a human geographer, wrote on sense of place using a phenomenological approach which emphasised place as a space of intentions, actions and meaning, rather than a physical location (1967). The works of these three researchers have directed and shaped my research both in grounding my theoretical knowledge and in the methods I chose.

Another influence on my research has been my personal experience as a guide and outdoor enthusiast in northern Canada. Coming from an environment which shares some similar climatic and physical features with Antarctica, I had very specific ideas of not only what Antarctica would be like, but also how people might interact with and perceive it. Working with people in the outdoors I was able to observe the changing relationship these people held with their environment. Often, these preliminary thoughts and ideas were based on television and the media. I was intrigued to see how personal experience would alter their perceptions of both their environment and themselves. Some would come to the Yukon with connections already formed, while others would leave never having made one. I often wondered how this happened. All this made me acutely aware of my own relationship to Antarctica and the evolving nature of it as my research progressed. Depending on my readings, the stories I heard from others, my own experience and mood, and even my purpose for going.

Another important contributor to my position is as an immigrant, not only to New Zealand, but as a second generation immigrant to Canada, and first generation to the Yukon as well. While I love and value the landscape in which I was raised, I know that I have a very different connection to the land than do the Athabaskan, the Tlingit, and the Gwitch'in. The idea of *tabula rasa* that Antarctica epitomized for me grabbed my attention and drew me to it. With no indigenous population and a relatively recent human history, Antarctica held my imagination as a place where an immigrant could make a home their own. It is this which first drew me to do research on how people understand, perceive and connect with Antarctica through a range of experiences.

My position as a young, northern, academic woman also has an influence on the intersubjective nature of my research. Qualitative research which includes interviews blurs the traditional subject-object relationship common in the majority of quantitative research and leads to a subject-subject relationship, or intersubjectivity. This relates to how the subject being interviewed perceives the subject conducting the interview and shapes their answers accordingly (Fontana and Frey, 1994). Gender has been well examined as an influence on participant responses in many different fields, from health sciences (Colombotos, Elinson and Lowenstein, 1968; Cisin, 1963) to sociology (Williams and Heikes, 1993). Work by Williams and Heikes (1993) found that voluntary participants used an interviewer's gender to determine how they would frame their responses in order to "avoid offending or threatening the interviewer with unflattering or socially undesirable opinions" (p.288). Age is another trait that has the potential to be attributed to shaping respondents' answers. Benney, Riesman and Star (1956) examined how age and sex of interviewers affected participant responses. They determined that "what matters is not actual chronological age but perceived age" (p.144). And similarly to gender, interviewer age is used by respondents to frame their responses in ways that maintain the socially acceptable age relationship (Benney, Riesman and Star, 1956). My position as an academic also plays a role in how respondents relate to me as an interviewer. The traditional view of academic as an authoritative figure from a certain socio-economic background can certainly influence how participants frame their answers in order to achieve what they deem to be socially desirable responses (Weiss, 1968). Finally, my personal background as a northerner with previous experience in cold, dark environments makes the sharing of similar experiences from Antarctica easier.

Finally, my own direct experiences in Antarctica as a result of this research must be stated. These experiences, as a tutor on a university field course and later, as a research assistant, have two main impacts on the project; first, my interpretations and resultant analysis of direct experience respondents interviews, and second, on the research results gathered 'in situ' at Scott Base. My own direct experience of Antarctica, and more specifically, Scott Base, allowed me to experience the New Zealand Antarctic culture that was discussed by respondents. This "prolonged engagement" allowed me to spend "sufficient time in the field to build trust and rapport with the respondents, to learn the

‘culture’ of the relevant group(s) and to investigate for possible misinformation/distortions introduced by the self or respondents” (Baxter and Eyles, 2010, p.514). I was cognisant of colloquial terms used by respondents, understood their references to local places and experiences, and used this knowledge in the eventual analysis of my data. The second impact on the project arises from the interviews in Antarctica being collected directly in the place under discussion, or ‘in situ’. Interviews were conducted both at Scott Base and in nearby field camps, both of which may have different influences on the data gathered. The general surroundings made it easy for respondents to point specific things out and thoughts of their work and integration with Antarctica were at the forefront of their minds. Interviews in camps were further influenced by being conducted outside with the whole array of sensory stimulations were present, from bright sunlight to blowing wind, from squawking penguins to cold ice. These environmental factors no doubt influenced the directions of individuals’ thoughts and the resultant conversations.

Each interview is a unique interaction between two people and there is no hard and fast rule as to how each individual will respond to another. By outlining the possible influences certain characteristics can have, different responses gained from others may be better understood as socially influenced constructs of the same reality.

### **3.2 Methods**

Grounded in a transactional-interpretive paradigm with strong phenomenological interest, this research draws on a variety of methods from along the quantitative and qualitative continuum. The use and combination of multiple methods has been written about by numerous people and is succinctly discussed by Punch (2005). He presents eleven approaches used for integrating qualitative and quantitative methods in his book (2005), several of which are of direct interest to my chosen research path; quantitative and qualitative research being combined to provide a general picture, looking at structure and process, and solving the problem of generality.

In the first of these, Punch discusses how “[q]uantitative research may be employed to plug the gaps in a qualitative study which arise because, for example, the researcher cannot be in more than one place at any one time” (2005, p.242). This approach is particularly relevant to the interviews as it will be difficult to gather

interviews from enough people across the entire country to ensure a representative sample. In this case, quantitative questionnaires could be more easily and quickly spread and filled in to increase the sample population. The second approach relates to *structure and process*, which plays on the strengths of quantitative research to get “to the ‘structural’ features of social life” and those of qualitative research “in terms of [the] ‘processual’ aspects” of social life (Punch, 2005, p.242). Interviews and narratives would provide the ‘how’ for sense of place construction, where the questionnaires would provide the ‘what’; which pieces and characteristics go into creating a sense of place. The merging of the two would thus provide a theory as to how those things come together. The *problem of generality*, the third approach, deals with the difficulty of generalising data garnered from qualitative research. The view is that with the “addition of some quantitative evidence” it is possible to produce results that may be more easily applied to broader populations (Punch, 2005, p.242). Each of these approaches contributes to the overall methodology guiding this research.

On a more practical level, creating questions which clearly communicate the desired meaning to a variety of respondents is challenging. In his book on question creation, Foddy (1994) presents the idea of ‘social interactionism’. He defines it as

*[S]ocial actors in any social situation are constantly negotiating a shared definition of the situation; taking one another’s viewpoints into account; and interpreting one another’s behaviour as they imaginatively construct possible lines of interaction before selecting lines of action implementation.*

- Foddy, 1994, p.20

He suggests that a questionnaire fits within this definition of social situation, and that the respondent’s perception of the researcher’s purpose for asking the question can influence the answer they provide. This emphasises the importance of clarity throughout the questionnaire, including stating the purpose of the research, the reason for the questions, as well as creating simple, clear questions. Respondents are “engaged in joint ‘sense-making’ activities with the researcher” (Foddy, 1994, p.23) and every effort a researcher can make to facilitate clear communication will lead to a more reliable set of responses.

The specific tools used to explore the question of perceptions of Antarctica include a mail-out questionnaire and a series of semi-structured interviews among a wide range of New Zealanders with a range of Antarctic experiences. Each questionnaire and interview conducted was treated as a unique case study. This allowed each respondents' unique set of relationships and experiences with Antarctica to be fully considered throughout analysis, maintaining the phenomenological focus on context. This use of the "collective case study" (Stake, 2000, p.236), is used to further the understanding of how sense of place develops in extreme and unusual environments. Results from both of these were also analysed for complexity using an adapted version of the complexity scoring method as described by Suedfeld, Tetlock, and Streufort (1992).

### **3.2.1 Questionnaires**

The study of perceptions and sense of place is an area of research which has a history of survey or questionnaire use, from self-administered questionnaires (Genereux, Ward, and Russel, 1983; Hidalgo and Hernandez, 2001; Hernandez et al., 2007) to interviewer-administered (Kyle, Mowen, and Tarrant, 2004; Watson, et al., 2007) to a combination of both (Kliskey and Kearsley, 1993). While there are great differences in their administration, they are all dependent on the careful attention to structure, of both the individual questions and the overall flow, to ensure confidence in the findings (Gillham, 2000). By examining previous sense of place research which has implemented questionnaires in a variety of forms, well-structured and pertinent questions were created for this research.

In his book on questionnaire development, Gillham (2000) suggests one of the first steps to designing a questionnaire is to identify the topics which should be covered. Secondly, the order of these topics is important in how they lead the respondent through the questionnaire. For Punch (2005), this begins with creating a conceptual definition of the variable being explored with the purpose of the questionnaire to operationalize it. For any questionnaire, he suggests the framework which flows from cognition (knowledge), to affect (attitudes), and ending with behaviour. Punch identifies two levels of variables which can be graphically represented – *general variables*, which flow down from the overarching question, and are informed by questions about *specific variables* (Figure 3.3).

With the conceptual map complete, the three general variables can be separated into cognitive, affective, and behavioural components. The image respondents have of Antarctica fits well within the cognitive bracket, showing what people *think* of Antarctica including the various sources from which that image is based. The feelings respondents have for Antarctica falls within the affective bracket, showing how they *feel* about Antarctica. And the various connections respondents have with Antarctica demonstrate the behavioural aspect of their overall sense of Antarctica, showing the *behaviour* which has connected them to Antarctica.

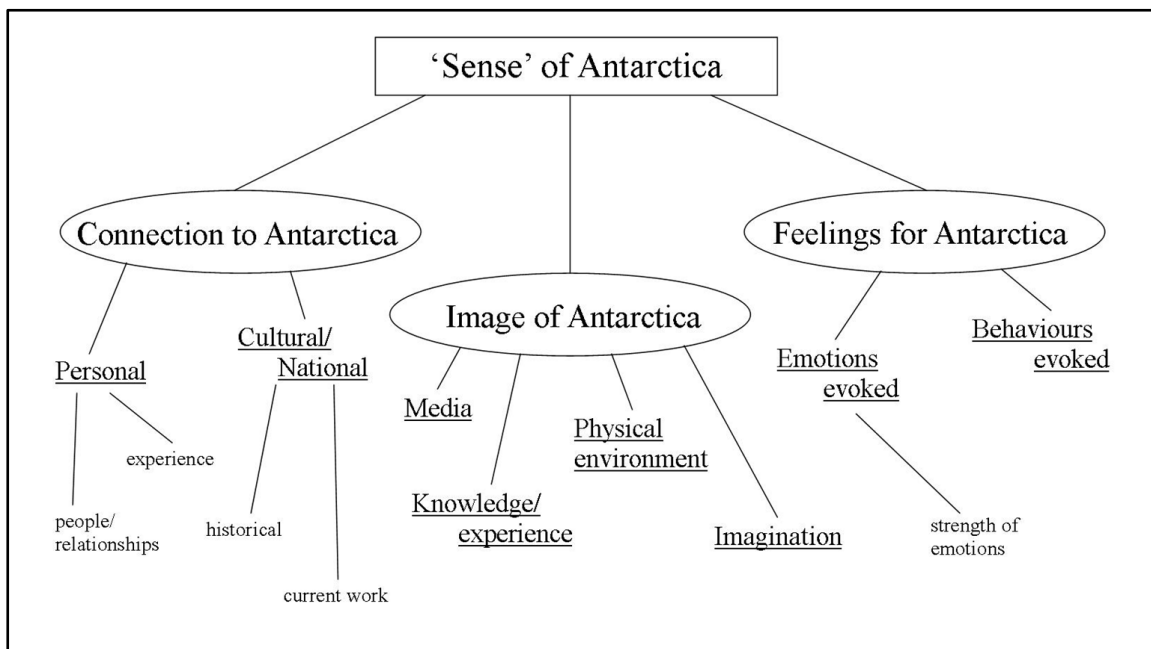


Figure 3.3 Conceptual map of questionnaire showing specific variables underlined and general variables circled.

The final questionnaire consisted of four pages, with five questions, a selection of demographic questions and a page for additional comments (Appendix 1 - Questionnaire). The first page focused on the cognitive aspect of respondents' sense of Antarctica with three open-ended questions on their idea of Antarctica. The second page looked at the affective aspect of respondents' sense of Antarctica with a scale of emotions possibly evoked by Antarctica. The third page asked about the behavioural aspect of respondents' sense of Antarctica by asking about how they had interacted with and come to learn about Antarctica. This page also contained basic demographic information considered

important for the study. The last page provided space for respondents' to elaborate on anything they felt might add to the research.

In an area of research heavily focused on meaning and context, questionnaires provide the possibility of applying findings to a broader population (Curtis, Gesler, Smith, and Washburn, 2000). Mail-out surveys are an especially common choice as they allow for wide dispersal and a relatively affordable cost per unit with a potential for high return (Brennan, 1992). They are also easily integrated into a multi-method format. Kliskey and Kearsley (1993), for example, used this to their advantage when examining the range of perceptions of New Zealand wilderness. The authors used the mail-out survey to conduct a preliminary sample of a wide range of New Zealand residents, before using face-to-face interviews with back-country users in certain accessible areas.

The question of numbers is also an important factor in considering a method. Brennan (1992) suggests that the reputation for low response rates is “undeserved”, and makes several suggestions to achieve higher response rates including “to send at least two reminder letters, includ[ing] a questionnaire with each reminder, and [to] include a reply-paid envelope” (p.24). He also suggested addressing the survey to a specific person and including a monetary incentive. By using these tools, Brennan suggests that a response rate “of 60% or better can be routinely achieved for mail surveys of the general public” (p.24). As the mail-out survey was to constitute a preliminary study of a broad range of New Zealand residents, a target of 100 returns was assigned. Despite Brennan's assertions, a return rate of 25% was predicted so a total of 400 questionnaires were produced and mailed out.

Selecting an appropriate sample population is an integral part of any research (Kemper, Stringfield and Teddlie, 2003). In their book chapter on mixed method sampling techniques, Kemper, Stringfield and Teddlie (2003) go so far as to claim that “[i]n research, sampling is destiny” (p.275); emphasizing the importance this step plays in determining the success of a research project. Developing on the work of Miles and Huberman (1994), Curtis, et al. (2000) highlight several important considerations in developing a sampling scheme. They suggest that

*“(1) The sampling strategy should be relevant to the conceptual framework and the research questions addressed by the research. [...] (2) The sample*



*should be likely to generate rich information on the type of phenomena which need to be studied. [...] (3) The sample should enhance the 'generalizability' of the findings. [...] (4) The sample should produce believable descriptions/explanations (in the sense of being true to real life). [...] (5) Is the sampling strategy ethical? [...] (6) Is the sampling plan feasible?"*

- p.1003

As a preliminary survey meant to garner information from New Zealand residents living around the country, a probabilistic sampling technique was chosen. An important factor in sampling such a geographically-dispersed and economically-diverse population is accessibility. Accessibility to names and addresses of the entire population is by no means equal and rules out the possibility of pure random sampling. For the purpose of this survey, a multiple probability technique (Teddle and Yu, 2007) was used with the 2009 New Zealand electoral roll, with names and addresses randomly selected from randomly selected electoral districts. New Zealand has a unique, double-layered electoral system with both a general set of electoral districts and a Maori set (Elections New Zealand, 2007). While a Maori resident can choose on which set of districts to vote, all other residents belong to the general districts. To ensure no biases would be encountered, both sets of districts were included in the sampling process.

The sampling process began by randomly removing 15 districts (20% of the total population). Next, the proportion of the total population held in each remaining district was determined and converted to the number of names needed from each roll in order to provide a proportional sample from each one. The number of names in each roll was divided by the total number required and used to count up from the randomly selected name chosen from the book. This eliminates the chance for any personal selection bias on behalf of the researcher. This process is repeated for each roll until complete.

Questionnaires were sent out in batches of 40 every two to three weeks to avoid any variation in response rate due to time of year. Reminder letters, which did not include a second questionnaire due to budget limitations, were sent out two to four weeks after the initial questionnaire was posted.

### 3.2.2 Interviews

Interviews are one of the most widely used tools for qualitative research; with a wide range of techniques and approaches, from face-to-face to telephone, and from individual to group (Payne and Payne, 2006). Researchers in sense of place have long used interviews to gather the context-rich meaning of place integral to their research (Manzo, 2005; Kliskey and Kearsley, 1993; Basso, 1996). In order to “enable respondents to give their accounts of their experiences, opinions and feelings in their own way” (Payne and Payne, 2006, p.132), unstructured interviews were chosen for this research.

Unstructured interviews, while not reliant on a rigorous adherence to an interview schedule, do benefit from a selection of guiding questions to ensure specific topics are covered in each interview (Payne and Payne, 2006). This not only allows for a more natural flow to the conversation, but provides the interviewer the opportunity to delve for more details and to clarify any uncertainties. Similar to the questionnaire, topic areas were identified and broken into appropriate questions (Appendix 2). All interviews began with the same general question – What does Antarctica mean to you? From here, the interview was determined by the respondents’ narrative flow. Despite some variation, the interviews generally progressed from meaning, through how those meanings were created with what experiences, ending with any connections, either personal or social, the respondents felt they had with Antarctica. The maintenance of this narrative reflects the importance other qualities play in communicating meaning, or as Tuan (1991) puts it, how “the quality of human communication, including (preeminently) the kinds of words and the tone of voice used, seems to infect the material environment, as though a light – tender, bright, or sinister – has been cast over it” (p.690). In order to capture as much of the nuances of the verbal narratives as possible, all interviews were recorded using an Olympus DS-2400 digital voice recorder. No notes were taken during the interviews to ensure full focus was given to the respondents, but time was taken after each interview for notes and reflections to be written down.

An important aspect of this research deals with the role of experience in creating sense of place. It was therefore important to ensure a broad spectrum of people were included with a wide range of Antarctic experiences. This was accomplished in with a set of two recruitment phases; the first phase focused on New Zealanders with no experience

in Antarctica, and the second phase focused on individuals with experience. Recruitment for the two groups is outlined below.

#### 3.2.2.1 Indirect experience New Zealanders

The indirect experience individuals (n=9) were recruited using two different techniques. The first technique consisted of convenience sampling, using personal networks within different parts of my own life (neighbours, partner's co-workers, colleagues). This approach allowed recruitment of participants from a wide range of experiences with Antarctica. While efforts were made to ensure a wide variety of participants were recruited, convenience sampling has a high likelihood of being unrepresentative (Walter, 2006). The second technique attempted to counter this issue by recruiting strangers in different locations around the South Island of New Zealand. The attempt to do random sampling at the airport and other central locations in Christchurch was hampered by the February, 2011 earthquake.

#### 3.2.2.2 Direct experience New Zealanders

One participant was recruited and interviewed in New Zealand, and the remaining participants were recruited and interviewed in conjunction with another research project that focused on the values, beliefs, and social influences that influence a person's decision-making relating to the Antarctic environment (n=45). Most recruitment occurred on base (n=24), with one day-trip to nearby field camps at which 16 interviews were conducted. Due to the joint nature of the project, interviews followed a slightly different set of questions (Appendix 3) and not all interviews were conducted by the same researcher. Interview technique differences were minimized by conducting joint interviews to begin with to ensure a thorough understanding of the questions and follow-up exploration were understood. However, any influences due to interviewer differences (young female new student versus older male established researcher) could not be avoided. The joint project focused on scientists, so interviews with base staff were conducted following a similar interview schedule to those used back in New Zealand.

### 3.2.2.3 Modes of Analysis

Interview data was analysed using manual techniques of literature referencing and theme identification. Each interview was mapped using a mind mapping technique in order to visualise how ideas were connected by the respondents. Several of these were set aside to use for referential adequacy checks later on (Baxter and Eyles, 1997), while the remainder were analysed for theme emergence. The mind map technique allowed quotes to remain in context and similarities between maps, along with comparisons to literature, allowed similarities and themes to arise. Once initial themes were identified, these were again assessed for thematic grouping until broader themes were identified (Appendix 4 shows how this was done for the questionnaire data). This is similar to the techniques developed by Glaser and Strauss (1967) in their grounded theory approach, but does not use the same coding techniques as these were found to be too prescriptive and ignored context. Finally, the reserved interviews were brought back into the analysis and examined for fit with the established themes.

### 3.2.3 Complexity Scoring

The way in which themes are integrated and connected by each participant is an important part of understanding sense of place. Assessing response complexity locates participants as complex, self-organising systems who compress incoming information according to their “life experiences, values, cultural affiliation, and social status” (Portugali, 2006, p.658). The unique nature of this internal system causes widely available information to be interpreted and compressed in a distinctly unique manner, resulting in a multiplicity of interpretations of the same place. Using a technique based on the work of Suedfeld, Tetlock and Streufert (1992), the complexity of the responses was investigated. It is the way in which similar information is processed and linked together which alters between individuals.

The scoring method was adapted from those developed by Suedfeld, Tetlock, and Streufert (1992) for “assessing the integrative complexity of verbal protocols obtained in both experimental and archival settings” (Baker-Brown, Ballard, Bluck, de Vries, Suedfeld, and Tetlock, 2005). The method is based on theory that “focus[es] on the complexity of information processing and decision making, complexity being defined

and measured (usually on a 1-7 scale) in terms of degrees of differentiation and integration” (Suedfeld, Tetlock, and Streufert, 1992, p.393). A score of one was assigned when only one theme was identified by the respondent. A score of two was assigned when the respondent focused on one theme, but made mention of how this theme might cause or bring about another theme. A score of three was assigned when two or more themes were identified, but there were no connections or linkages between the themes in the second question. A score of four was assigned to questionnaires with more than one theme identified and emerging integration or connections shown in the second question. These were generally circular, linear, or simple-branched maps. A score of five was assigned when there were obvious and multiple interconnections between multiple themes. A score of six was assigned when the explanation in question three included how multiple themes interacted and influenced one another. And a score of seven was assigned when an over-arching viewpoint was presented with multiple themes all interacting and influencing one another.

All complexity scoring was completed by the author alone through a series of blind scores compared for scorer reliability. The author is not certified in integrative complexity scoring, but has completed the training portion of the program developed by Suedfeld, Tetlock, and Streufert (1992).

### **3.3 Constraints**

As with any research, there are certain constraints which have shaped the final outcome of this project. These are presented here to increase the transparency of the research and increase the reliability and validity of the conclusions presented.

Despite numerous and varied attempts to encourage returns, the questionnaires suffered from a low return rate, with only 30 returning from the original 400. This represents a 7.5% rate of return, far below the hoped-for 25%. The project was adapted to use these responses as a preliminary examination of the topic and to help guide the interview questions.

The second recruitment drive for more interviews with New Zealanders with indirect experience to be held at the Christchurch airport was disrupted by the February 22<sup>nd</sup>, 2011 earthquake. This caused a delay in research as interviews were not deemed

appropriate for a time, resulting in a lower than desired number of interviews with participants with no direct Antarctic experience. Once interviewing recommenced, they were conducted around Christchurch using a combination of convenience and self-selective sampling. Potential interview participants were selected based on ensuring a suitable spread in age, sex, and occupations. Individuals were recruited in person throughout the city. Once an individual agreed to do the interview, a suitable date and location were established in which to conduct the interview.

## **4.0 Questionnaires**

This chapter examines the results of the questionnaires and provides a preliminary examination of the emerging themes and trends. Quantitative results are presented in the first section, and are organised in a similar manner to the questionnaire. Common themes are identified here. The second section explores each of these themes and how they come together to form New Zealanders' various senses of Antarctica. Complex analyses could not be properly attempted due to the small size of the sample. Instead, descriptive statistics and simple inferential statistics were used to illustrate the structure of the data set.

### **4.1 Results**

The ratio of male-to-female respondents was fairly even, with a slightly higher proportion of respondents being female (18:12). While the male respondents had a wider range of ages (min=20 max=90 M=55 SD=22.3), it was more heavily weighted to the middle-aged respondent. The female respondents were much less widely dispersed (min=24 max=76 M=48 SD=13.9), and were also much more evenly represented across the entire range of ages. All 30 respondents had no direct personal experience in Antarctica. Geographically, respondents were predominantly situated on the North Island (n=20), and in larger cities (n=23). Close to half of respondents emigrated to New Zealand (n=11) and these were predominantly female (n=7). Female respondents were more highly educated than their male counterparts, with 61% (n=11) having done some university and only 33% (n=4) amongst the men. This did not seem to impact personal income, as 58% (n=7) of male respondents and 67% (n=12) of female respondents earned more than the June 2011 national annual income average of \$36,500 NZD (Statistics NZ, 2011). Results are presented for each section of the questionnaire – cognition, affect, and behaviour.

#### **4.1.1 Cognition**

The first three questions focused on the respondent's knowledge of Antarctica. The opening question asked respondents to list as many words or phrases as they wanted that they associated with Antarctica. The second question asked respondents to organise

the listed words into a flow diagram connecting their different ideas. Finally, the third question asked them to choose one or two of the words or phrases they listed and explain how it had come to be associated with Antarctica for them.

Across the 30 respondents there were a total of 279 individual words and phrases listed (Appendix 4). After examining all terms, eight themes were identified into which the terms could be organised – Physical Characteristics, Wilderness, Future, Current Use, History, New Zealand, Danger, and Global Connections (Figure 4.1). Words related to the Wilderness theme were mentioned by the greatest number of respondents (63%). This theme included terms as sublime, vast, unspoiled, untouched, adventure, and beautiful. Physical Characteristics followed closely behind with just over half of respondents (53%) making mention of geographical features, wildlife, and physical characteristics such as cold, ice, snow, and white. New Zealand was the next most elicited theme, with a full third of respondents making mention of it (33%). Terms here included Christchurch Antarctic Centre, Scott Base, New Zealand, and the Erebus disaster. The latter term was placed in this theme as opposed to the Danger theme as it is a very specific reference to an important event in New Zealand national history. Current Use followed (30%) with

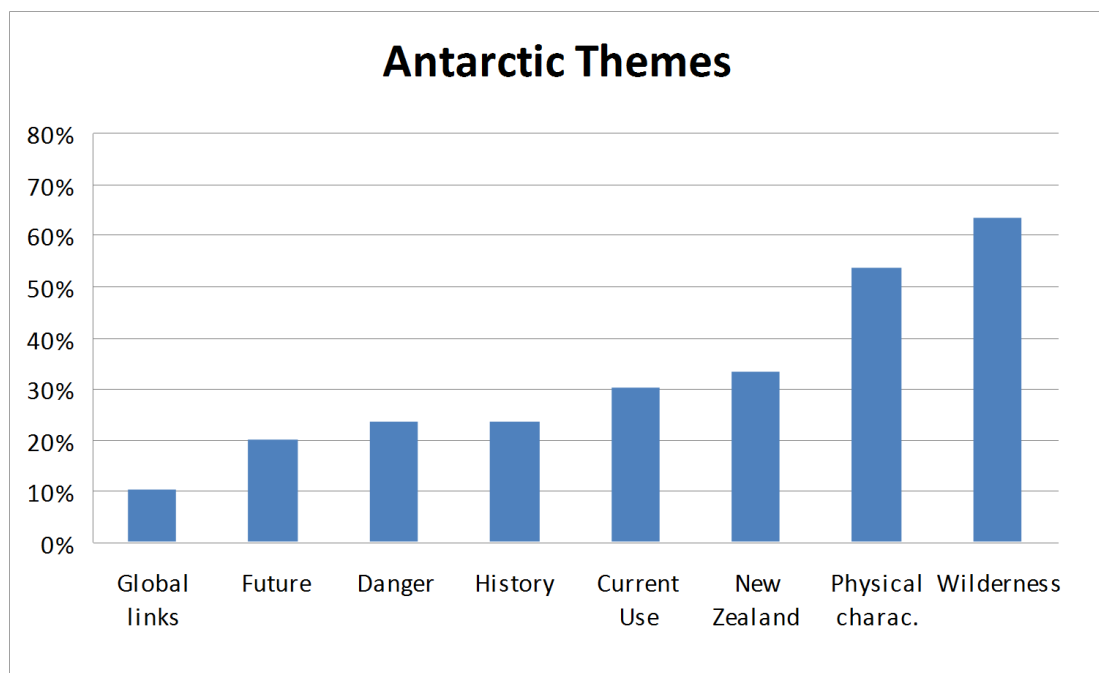


Figure 4.1 Theme classification of question one on questionnaire.



terms which related to current day use of the continent, such as tourism, scientific research, and fisheries. Terms such as global warming and frozen ecological history were also included here as they are reasons for the current research being undertaken. The themes of History and Danger were mentioned by just under one-quarter of respondents (23%). The History theme included many of the early explorers' names, like Scott, Amundsen, and Mawson, as well as broader terms, such as early explorers and exploration. Danger is a theme potentially related to others, such as wilderness, history and New Zealand. The terms were separated as the emphasis on them was strong in certain questionnaires and it appears as an important differentiator from other environments. The terms placed in this theme included merciless, survival, hardship, and tragedy. Future potential was referred to by a fifth of respondents (20%). This theme included terms pertaining to what might potentially happen, either good or bad, in Antarctica; preserve, sanctuary, mineral potential, and responsibility. The final theme, Global Connections, is the smallest theme, with only one-tenth of respondents (10%) referring to it. The three terms which make up this theme did not fit anywhere else and are easily identified as a unique group, albeit small. They are territories, Antarctic Treaty system, and Discovery – Dundee, Scotland.

The range of words respondents chose was also examined. Nearly one-third (30% n=9) of the respondents only used words which referred to the Wilderness or Physical Characteristic themes. None of these respondents mentioned any links between human presence and the Antarctic continent. A further eight respondents included human presence through historic connections, from the Erebus crash to the early explorers. Four respondents mention scientific presence of humans in Antarctica, as well as both Wilderness and Physical Characteristic themes. Four more respondents include a variety of human connections, from tourism and adventure, to science and history. Of these, only one made mention of New Zealand connections such as Scott Base and the Erebus crash. Three more respondents made only broad note of the fact that humans do go to Antarctica through the mention of buildings, technology, and aircraft. The last two respondents placed the human connection to Antarctica through the inclusion of adventure. This variety of themes demonstrates the range of different ways respondents view Antarctica as a place for humans.

The various demographic information was analysed to look for any significant influence on word selection. Beginning with a simple chi-square test, information on sex, age, personal income, current town or city of residence, country of birth, and highest level of education was tested against word selection. No significant differences were found at this basic level of analysis, so further work was done to examine whether any patterns would emerge with more complex analysis. After completing the complexity scoring of the questionnaires, the resultant scores were tested for significance against the demographic information using the Pearson bivariate correlation. Although no statistically significant linkages were found, the education classification showed an interesting trend relating to complexity scores ( $r_{\text{edu, cxy}}(28) = .18$ ,  $p = \text{n.s.}$ ). The most complex conceptions of Antarctica, with both a greater number of themes, as well as a more integrated view of all themes mentioned (Suedfeld, 1992) were held by those respondents with higher levels of education. This is supported by research done by Baker-Brown et al. (2005) which found that “training in adulthood” (p.394) could modify ones' complexity. While there were respondents with lower levels of education who demonstrated a more complex view of Antarctica, these were found to have had more exposure to a larger variety of sources of Antarctic information. This included sources which would require personal interest, as an investment of energy is required, such as going to museum exhibits, visiting an Antarctic centre, or attending a public lecture. This will be examined in further detail in the section on behaviour.

All three questions in the cognition section of the questionnaire were also examined as a whole, to assess the complexity of the overall conception of Antarctica held by the respondent. Most of the questionnaires were scored as a two ( $n=9$ ), three ( $n=9$ ), or four ( $n=9$ ). Only one questionnaire received a score of one, and on the other side, only one questionnaire received a score of five and one more, a score of six (Table 4.1).

Table 4.1 Complexity scoring of questionnaires

Score	Number of questionnaires
1	1
2	9
3	9
4	9
5	1
6	1
7	0

#### 4.1.2 Affect

The next section of the questionnaire focused on respondents feelings about Antarctica. This was examined using a modified version of Russell and Snodgrass's (1987) chart of mood descriptors (Figure 4.2). Respondents were asked to mark their agreement along a continuum ranging from *not at all* to *extremely* for 20 different emotions. These ratings were then transformed into a wind-rose graph, placing arousal level along the x-axis and pleasantness along the y-axis. This graph showed the general affect Antarctica caused in each respondent.

After wind-roses were completed for each respondent (Figure 4.3 for mean), each one was assessed by quarter. The top right quarter, with high arousal and high pleasure was assigned as the first quarter. The bottom right quarter, with low arousal and high pleasure was assigned as the second quarter. The bottom left quarter, with low arousal and low pleasure was assigned as the third quarter. And the top left quarter, with high arousal and low pleasure was assigned as the fourth quarter. Each quarter or each wind-rose was then rated using a scale from 0 to 4 indicating the reported strength of the feelings evoked by Antarctica located in that quarter. Each quarter was assessed by looking at the other three quarters, as well as by comparison across all wind-roses. Generally, a value of 4 was assigned when all 5 of the words were at or near the maximum. A value of 3 was assigned when either all 5 words were somewhat high or 3 or more were quite high and the rest were relatively lower. A value of 2 was assigned when fewer than 2 words were marked as somewhat high or all 5 words were marked as less than half. A value of 1 was assigned when all values were very low or only 1 word had received a rating of below somewhat high. A rating of 0 was assigned when there were no words marked at all in a quarter. The values from all wind-roses of each quarter were totaled to see how each quarter compared overall. The quarter which was most highly rated was the first (104), with high arousal and high pleasure. Second most highly rated was the second quarter (82), with low arousal and high pleasure. The third most highly rated was the fourth quarter (68), with high arousal and low pleasure. The last quarter, the third, was rated quite low with a total value of 39. This was the only quarter to receive any values of 0. Individual wind-roses were also examined for any trends relating to demographic influences, but no significant connections were found.

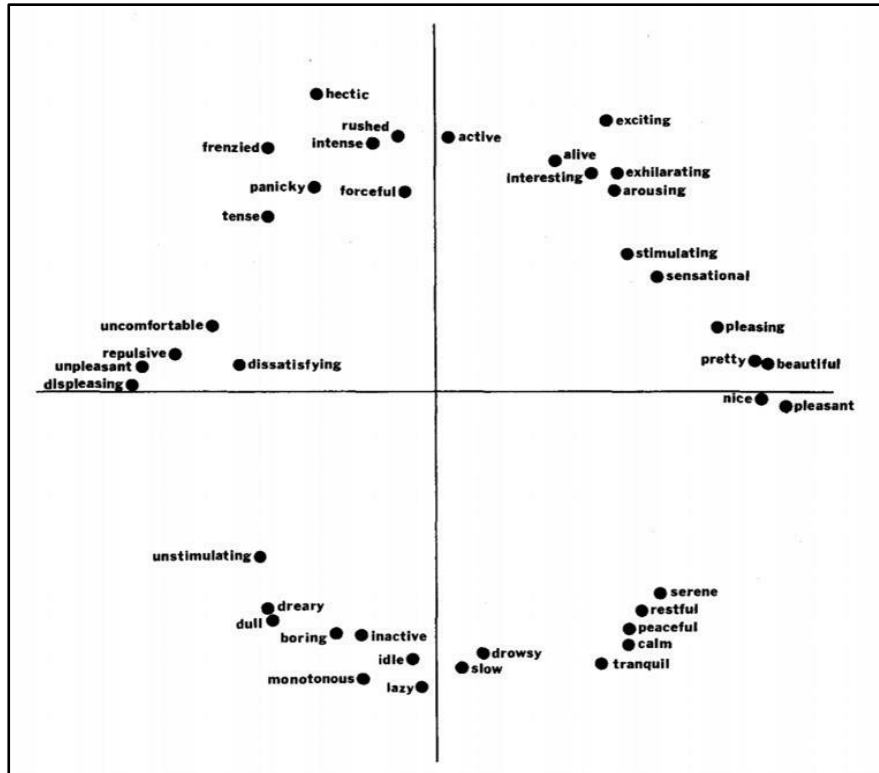


Figure 4.2 Russell and Snodgrass's diagram ordering affective quality descriptors (1987).

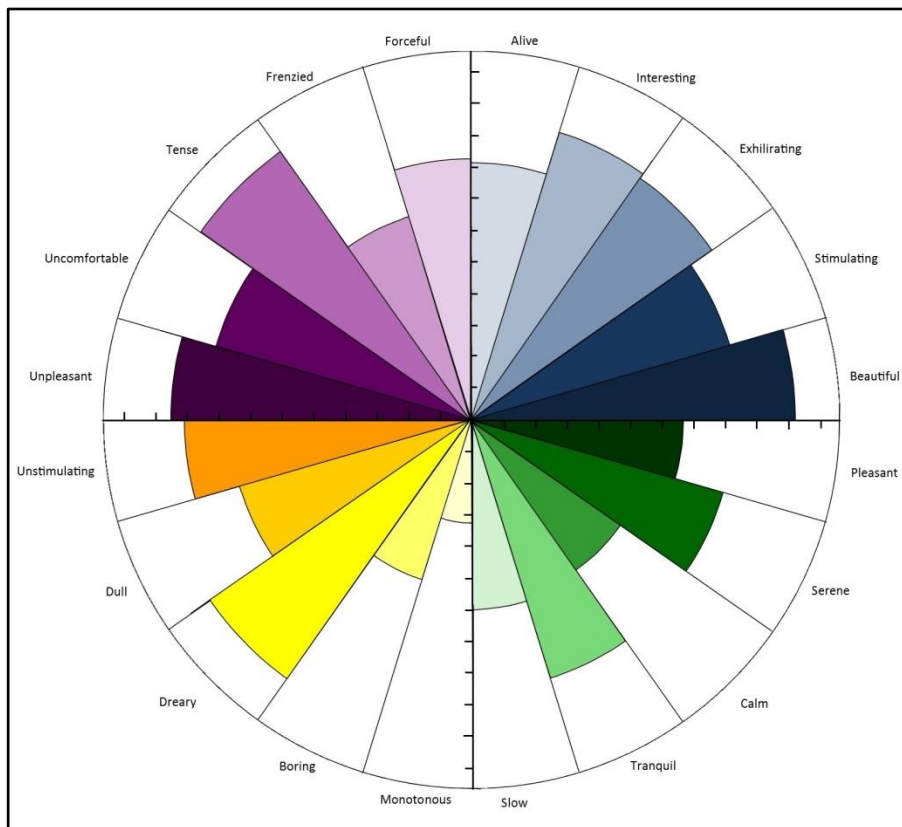


Figure 4.3 Affect wind rose showing mean values across all respondents.

### **4.1.3 Sources**

The final section of the questionnaire focused on how respondents had come to develop their sense of Antarctica. A list of different ways in which one may encounter Antarctica in New Zealand was provided and respondents were asked to tick those that had had an influence on their perception of the continent. These ranged from images of Antarctica as seen on commercials and in advertisements, to movies based in or around Antarctica, to visiting an Antarctic centre, to hearing about the personal experiences of family or friends who had been, to having been themselves. None of the respondents had been to Antarctica themselves.

The most common source of information shaping a respondent's understanding of Antarctica was reading about it in the newspaper or hearing about it on the radio or television. This was the only source of information which all 30 respondents marked. The next most common source of understanding of Antarctica came from pictures in advertisements and commercials (n=26). After this came movies about Antarctica (n=22) and school lessons (n=21). Of those who marked school as a source of understanding of Antarctica, 17 had been through the education system in New Zealand and four had been through overseas. The next most common source of understanding of Antarctica came from hearing about it from family and/or friends who had been down there (n=14). Visiting an Antarctic centre (n=12) or an Antarctic exhibit at a museum (n=11) followed. Finally, the least common source of understanding of Antarctica marked was from attending public talks on the subject (n=3). "Literature and historic photographs" was marked as an alternate source of understanding by one respondent.

## **4.2 Themes**

In his paper on aesthetic perception, Nohl states that "[s]ince perception is always connected with feelings and emotions, sensory cognition cannot be completely explained by logic" (2001, p.227). And so the exploration of sense of place takes us beyond the realm of pure logic and cognition, and into the strata of affect and behaviour. This inclusion allows for the examination of the meanings which people attach to their perceptions and how these meanings have come to exist. The following section will explore the different themes identified, as well as examine the links drawn between them

by respondents. The connections between affect and cognition will then be drawn to provide a more holistic understanding of the personal senses of Antarctic place that exist for New Zealanders. Finally, sources of information will be examined to begin to elucidate any relationship between sense of place and experience.

#### **4.2.1 Wilderness**

Wilderness has long been a challenging term to define. Its varied usage has led to misunderstandings amongst wilderness users, such as hunters, fishermen, trampers, and mountain climbers (see Kliskey and Kearsley, 1993; Higham, 1998; Lutz et al., 1999) and long debates amongst academics (see Cronon, 1995; Hays, 1996; Waller, 1998). Nash puts it well when he writes,

*The difficulty is that while the word is a noun it acts like an adjective. There is no specific material object that is wilderness. The term designates a quality (as the “-ness” suggests) that produces a certain mood or feeling in a given individual and, as a consequence, may be assigned by that person to a specific place.*

- Nash, 1982 (p.1)

It is this quality as an evoker of feeling and mood that makes this term ideal as a theme. Four main feelings or moods relating to wilderness can be identified in the questionnaire responses; beauty and personal elevation, alienation and inhospitality, adventure, and fragility. There are also examples of terms which incorporate more than one of these themes, highlighting the integrative nature of this theme.

The most mentioned facet of wilderness referred to the beauty and unspoiled nature of the landscape. Words like “serene” (Q029-ANZ), “pure” (Q017-ANZ, Q025-ANZ), “unspoiled” (Q005-ANZ, Q015-ANZ), and “untainted by civilization” (Q017-ANZ) drew close connection to “the value of wild country as a sanctuary in which those in need of consolation can find respite from the pressures of civilization” (Nash, 1982, p.4). Antarctica is viewed as a place of “majesty” (Q001-ANZ, Q012-ANZ), “glory” (Q008-ANZ), and “holy nature” (Q001-ANZ). The words and phrases calling on the more spiritual qualities wild places can evoke in people appear similar to findings by Williams and Harvey (2001) on transcendental experiences in forest environments. While

forests are very different environments than Antarctica, those researchers similarly found that “natural environments have a close association with transcendent experience” (p.249).

Closely linked to the facet of wilderness is the alienation and inhospitality the Antarctic environment inspires in people. “Isolation” (Q002-ANZ, Q019-ANZ, Q023-ANZ), “lonely” (Q008-ANZ), “unconquerable” (Q005-ANZ) and “formidable” (Q008-ANZ) are words which relate to the definition of wilderness by Samuel Johnson (1755) “in his *Dictionary of the English Language* as ‘a desert; a tract of solitude and savageness’” (from Nash, 1982, p.3). However, it is this “barren” (Q018-ANZ, Q024-ANZ) and “primitive” (Q019-ANZ) landscape which inspires an interest and draws in so many individuals, often directly inspired as the antipode of the comfort and safety of home (Tuan, 1993, p.149).

This leads to the third facet of wilderness raised by respondents, that of adventure. The idea of Antarctica elicits feelings of “adventure” (Q016-ANZ, Q025-ANZ, Q029-ANZ) and “excitement” (Q016-ANZ, Q029-ANZ) in respondents, despite their having no direct experience with the place. Examining the respondents who identified these terms, shows they are used in relation to both historic figures of exploration, as well as current media presentation and personal interests in the outdoors. The latter of which supports the work of Wray et al. (2010), who found a strong connection between the natural environment and New Zealanders’ sense of identity.

Finally, the fourth facet of wilderness identified by respondents is that of fragility. The term “vulnerable to exploitation” (Q015-ANZ) elicits images of a delicate environment not immune to human impacts. While wilderness is often viewed as a powerful force, people are increasingly aware of the vulnerabilities these places have, especially with regards to human presence (Higham, 1998). As landscapes altered by human beings spread, the need for unaltered landscapes is more greatly recognised as important to our psyche (Cronon, 1995). This is exhibited in the terms “stasis” (Q019-ANZ) and “to maintain its pristine condition” (Q026-ANZ) which demonstrate the respondents’ desire to maintain this “last great wilderness” (Q015-ANZ).

Several terms were also identified which did not fit into one of these four facets of wilderness. Instead, they crossed boundaries and spoke to more than one aspect. One

respondent in particular used three terms which elicited both the beauty and the alienation of Antarctica; “sublime”, “contradictory”, and “outer space on earth” (Q019-ANZ). The sublime has long been associated with wilderness, “that frightening awe” which is inspired by such an alien and unknown landscape. This reaction is seen especially with early explorers like Nansen and Byrd, who “appear to believe that life is more likely to yield its deepest meaning surrounded by the inhuman silence, beauty, and terror of ice that the quiet of one’s study” (Tuan, 1993, p.148). It is the seeming contraction of beauty and death first championed in the Romantic era by the likes of Coleridge’s *Rime of the Ancient Mariner* (1798) and Shelley’s *Frankenstein* (1823). This is also highlighted in the idea of outer space (Nash, 1982, p.3), as it shares many of the facets of earth-bound wilderness including both beauty and alienation, transcendence and inhospitality.

#### **4.2.2 Physical Characteristics**

The physical character of a landscape “sets bounds and gives form to” the sense of place developed there (Stedman, 2003, p.671). Whether it be via the direct influence of outstanding features (Shumaker and Taylor, 1983), the meanings imbued on certain features found within the landscape (Stedman, 2003), or as a mediator of the experiences and activities possible within the environment (Greider and Garkovich, 1994). Physical features are of even more importance in the development of sense of place over long distances and large expanses. Tuan writes about the development of national consciousness when a region “covers too great an area and [... cannot be] directly experienced” (1975, p.159). He suggests that regions of great size and extent are then rather known for the symbols they carry, including the unique geography they might possess (Tuan, 1975). This suggests that the geography, or physical characteristics of the landscape, becomes a symbol for a larger area. And although more respondents identified the Wilderness theme in their questionnaires, there was a greater variety of physical characteristics cited across all questionnaires. These included references to the animals, the climate, ice, specific geographic locations, and the diurnal cycles.

The animals listed by respondents included whales, seals, polar bears, plankton, and, the most common, penguins. Movies and documentaries are cited by one respondent as the source of their connecting penguins with Antarctica (Q013-ANZ), while another



respondent simply states “[t]his is their environment w[h]ere they [penguins, seals, whales] live and belong” (Q007-ANZ). The unique adaptations the animals have developed for living in such a harsh environment intrigue people, leading to adjectives such as stoic and majestic being used to describe them. Another factor, which cannot be discounted is the charisma associated with mammals such as seals, whales, and especially, penguins. This is highlighted by their presence in the media’s portrayal of Antarctica and thus in many people’s idea of the continent. Finally, the inclusion of polar bears by two respondents indicates a broader understanding of habitat type, regardless of whether they believe the animals occur there or not.

The climate facet of Physical Characteristics includes cold temperatures, high winds, storms, and the loss of visibility. The extreme nature of the climate, especially with reference to temperature and wind, are the most cited reason for this themes inclusion in people’s sense of Antarctica. The uniqueness of these features makes them both interesting and highly identifiable with Antarctica (Seamon, 1980; Suedfeld, 1987). Another cited source for this theme comes from respondent’s own experiences elsewhere. “Images of people wrapped up in layers of clothing against the cold” (Q011-ANZ) suggests the respondent has some awareness of or personal experience with layering clothing against the cold. This shows that while respondents may not have direct personal experience in Antarctica, they may be applying personal experiences gained elsewhere to their understanding of a different environment.

Ice was a widely applied term across questionnaires, with some respondents mentioning a variety of terms including ice, ice bergs, and snow. One respondent writes, “[t]he main (only) thing that comes to mind when I think of Antarctica is ice” (Q013-ANZ), while another writes “when I picture Antarctica in my mind, it is of a (sic) icy, white landscape” (Q024-ANZ). Other respondents refer to images portrayed in the media showing “acres of ice” (Q016-ANZ) and snow. This suggests that it is perhaps the sheer extent of this feature which links it so uniquely with Antarctica.

Geographic locations are also cited in respondents’ questionnaires. These range from the general, the “bottom of the earth” (Q020-ANZ), to the specific, “Vinson Massif” (Q003-ANZ). The general location of Antarctica contributes to its’ uniqueness, both as an identifier on the globe, as well as determining what other physical characteristics might

occur there. Specific location names act as another unique identifying feature to a place, they are “powerful evocators (sic) of place” (Tuan, 1991, p.688). Tuan goes on to suggest that “[n]aming is power – the creative power to call something into being, to render the invisible visible, to impart a certain character to things” (ibid, p.688). Names highlight the past presence of people on the continent and imbue a landscape with symbols and meaning for people without needing to travel there themselves (Collis and Stevens, 2007).

Light and dark are common motifs within the Physical Characteristics theme. The unique diurnal cycles which occur in Antarctica (and the Arctic), or as one respondent puts it the “endless night” and “endless day” (Q018-ANZ), makes it a highly identifiable feature to that place. Again, the extreme nature of this physical characteristic intrigues people and draws them towards the “longing to be taken out of oneself and one’s habitual world into something vast, overpowering, and indifferent” (Tuan, 1993, p.155).

#### **4.2.3 New Zealand**

Demonstrating an explicit link between Antarctica and New Zealand, this theme shows that, for some New Zealanders, New Zealand is a part of their Antarctic sense of place. Four major links are identified by respondents, the Erebus disaster, Sir Edmund Hillary, Scott Base, and New Zealand links. These can be further broken into two larger groups: past and present connections between Antarctica and New Zealand. Tuan (1975) suggests that a region “too large to be known personally by a majority of its citizens, is known conceptually through the flag, national anthem, [...] ethnocentric history, and geography” (p.160). Although Antarctica possess no unifying flag or anthem, the role of an ethnocentric history specific to New Zealanders is obvious in the existence of this theme.

Past connections between New Zealand and Antarctica consist of two major events which brought the nation’s attention to the continent. These are the Trans-Antarctic Expedition in 1957-58 and the Erebus air disaster of 1979. While both events had very different impacts on New Zealanders, they are both “representations of New Zealand’s national identity and heritage on the Ice” (Abbiss, 2003, p.22). Only one respondent mentioned “Ed Hillary”, and how he completed the “first journey to the south pole in [a] modified Massey Fergusson tractor”. This highlights the “New Zealand ‘can

do' attitude" (Abbiss, 2003, p.23) valued by many and seen as an important part of New Zealand national identity. Several respondents make mention of the Erebus disaster, and several more mention Mount Erebus, due to the "T.V. (news)" (Q018-ANZ) coverage received by the event beginning in 1979 and in the years to follow. Another respondent writes that was a "[n]ational disaster that still impacts on the national collective memory" (Q030-ANZ), which agrees with Abbiss' assertion that it was a "tragedy [...] with an effect on the national psyche" (Abbiss, 2003, p.24).

The current connections between New Zealand and Antarctica are somewhat different in that they do not focus on specific events, but rather on experience and interaction with the Antarctic. These include New Zealand, the Christchurch Antarctic Centre, and Scott Base. New Zealand is identified by respondents because Antarctica is "a part of New Zealand held in trust" (Q026-ANZ) and a place Kiwis "have a given responsibility to lead other nations in caring for" (Q001-ANZ). The relationship, in these cases, is one of responsibility and preservation. The Christchurch Antarctic Centre is cited by one respondent as a source of information on Antarctica, bringing the continent closer to New Zealanders. Finally, Scott Base was cited by many respondents as a physical link, or presence in Antarctica. It is perhaps best described by one respondent as "an icon to NZers (sic) I think and links to the history aspect of exploration and preservation and also to the science aspect of the present day with aspects of survival" (Q018-ANZ). Scott Base acts as a public symbol for New Zealanders of their shared past, the ever-changing present, and the many possible futures (Tuan, 1975; Manzoni and Pagnini, 1996).

#### **4.2.4 Current Use**

The manner in which people interact with their environment plays a strong role in shaping how they understand and perceive that environment (Genereux, Ward and Russell, 1983). "Not only do people clearly distinguish places on the basis of related behavior, but their behavioural representations of places are substantially related to their global, overall cognition, or meaning, of places" (ibid, p.54). Activities which are specific to a place are often deemed an important part of what makes that place unique (Genereux, Ward and Russell, 1983). This is observed in the questionnaire responses which list three

main current activities, or uses, as part of respondents perceptions of Antarctica; scientific research, tourism, and fishing.

Scientific research makes up the greatest proportion of references, including topics of research such as “wildlife research”(Q030-ANZ), “global warming” (Q013-ANZ), and “frozen ecological history” (Q028-ANZ); transport options used in research, “Hercules airplanes” (Q003-ANZ), “aircraft”(Q006-ANZ), and “helicopters” (Q018-ANZ); and broader terms like “research” (Q003-ANZ, Q018-ANZ), “scientific” (Q012-ANZ), and “scientists” (Q018-ANZ). One respondent referred to the engineering required for living in Antarctica, which reflects both landscape architects’ and cultural geographers’ ideas of how “a group of humans organises physical geography and transforms it” (Collis and Stevens, 2007, p.236) for both physical and cultural needs. These transformations make a landscape truly unique and identifiable, especially as an “[i]nternation[al] science stn. (sic) [where] various countries experiment and share their knowledge for peaceful purpose [...and] to solve world future problems” (Q028-ANZ) is so rare in our world today.

Tourism was also identified by respondents as a current use of Antarctica. Two of the references referred to broad ideas of “cruise ship tourism” (Q003-ANZ) and “tourism” (Q003-ANZ, Q018-ANZ). The respondent who identified the word tourism listed it “for the people who dream of going to visit and/or who worry about the pollution caused by visitors or global warming. It also links with the Erebus disaster and exploration” (Q018-ANZ). This is a complex explanation, highlighting different aspects commonly associated with tourism, encompassing both positive and negative aspects, as well as various types of tourism. The same respondent also listed a much more specific activity, “photography” (Q018-ANZ). While this could be seen as an activity conducted in Antarctica, the respondent uses it to refer to the way in which outsiders are able to encounter the continent through books and films.

The final aspect of current use identified is that of fisheries. The two terms identified by respondents approach the activity from different angles, with one seeing a “great food source in the sea” (Q022-ANZ) and the other fitting “fisheries” in between “protection” and “reserve” (Q018-ANZ). This reflects the ongoing discussion surrounding fishing in the Ross Sea (MFAT, 2000; Davison, 2012; Reflections on Science,

2011) with very vocal opponents (The Last Ocean, Greenpeace New Zealand) to a very lucrative fishing industry (Seafood New Zealand, Talley's).

#### **4.2.5 History**

History, both personal and cultural, is the way in which narrative is built, adding meaning to our lives and our environment (Pred, 1984). Environments with a shared history “can be interpreted as repositories of specific meanings, memories, values and emotions which are shared by members of a particular group” (Devine-Wright and Lyons, 1997, p.35). This means certain key events which occur in a specific place can become defining aspects of that place's identity. This is seen in the inclusion by some respondents of historic figures and terms in their questionnaires.

For questionnaire respondents, the greatest historic aspect of Antarctica is that of exploration. Terms range from specific explorers names like “Amundsen” (Q003-ANZ), “Mawson” (Q002-ANZ, Q003-ANZ), “Scott” (Q002-ANZ, Q003-ANZ, Q025-ANZ), “Ponting” (Q002-ANZ), and “Shackleton” (Q002-ANZ), to broader ideas of “exploration” (Q002-ANZ, Q009-ANZ, Q018-ANZ), “comradeship” (Q017-ANZ), and “history” (Q018-ANZ), to early transportation like “sleigh and dogs” (Q007-ANZ) and “Massey Fergusson” (Q030-ANZ). Explorers, “the likes of Shackleton, Scott, Admundsun (sic) and their race for the south pole and the hardships they endured on one of the planets last frontiers” (Q009-ANZ) appear to support many of the other aspects respondents identified as part of Antarctica. Although these explorers are generally known across Antarctic nations, identifying the tractor used by Sir Ed Hillary is more specific to New Zealand. Used by Sir Ed Hillary during the Trans-Antarctic Expedition of 1957-58, it directly connects New Zealand national history with that of the Antarctic. While Devine-Wright and Lyons (1997) suggest, “historical places can play a role in maintaining group [and...] national identities” (p.36), Basso (1996) suggests that it is also personal and group identities which play a role in maintaining places.

#### **4.2.6 Danger**

The extreme nature of the Antarctic environment makes human activities there much more dangerous than in the more temperate regions most human beings normally

reside in. Difficult environmental conditions make everyday living a challenge, with cold temperatures, high winds, and rugged terrain features making reliance on technology a necessity and any mistakes potentially disastrous (*ANZ Field Manual*, 2011). While it is the physical parameters of the environment which lead to danger and historic events which demonstrate them, they have been selected as a separate theme due to the unique challenges that basic survival there presents. The “bucket loads of care” (Q016-ANZ), as one respondent puts it, is due to the perceived risk associated with even basic activities like sleeping, going for a walk, and driving a vehicle.

Risk perception refers to the “judgement that there is a risk of a certain size at hand” (Sjoberg, 1998, p.85). Judgements are commonly based on a multitude of factors, but, generally, they are separated into two categories, “risk as feelings [...] and] risk as analysis” (Slovic and Peters, 2006, p.322). For individuals with no direct experience in an environment, risk would be judged on an analysis of information received from various sources. Respondents identified terms which referred to environmental dangers, including “merciless” (Q023-ANZ), “unhospitable conditions” (Q024-ANZ), and more specifically, “snow blindness” (Q018-ANZ). These broad terms demonstrate the basic assessment given to the particular environmental conditions associated with Antarctica. Other references were also made to more specific incidents like the Erebus crash, with terms like “plane crash” (Q020-ANZ) and “tragedy” (Q017-ANZ) which highlight specific examples of dangers this environment has caused and been reported about in the media.

#### **4.2.7 Future**

Many academics consider sense of place to be an ongoing process (Massey, 1991; Pred, 1984; Stowkowski, 2002; Seamon, 1979). Part of the idea of process is the passage of time and consideration of the future. Greider and Garkovich (1994) suggest that “as environmental change occurs [...] people negotiate the meaning of the contextual or environmental change as a reflection of their changing definitions of themselves” (p.10). This explicit connection between personal identity and place in the present raises the possibility of care for, and thought towards, the future and how it too might be negotiated to best suit this relationship. Respondents identified certain terms which related to their hopes, fears and ideas relating to Antarctica’s future. These were separated into four

categories, including preservation, fears, resource potential, and imagined outcomes. The two categories of preservation and fears are closely related with terms like “responsibility”, “protection”, and “future generations” (Q001-ANZ) suggesting what to aim for and terms like “pollution” (Q002-ANZ, Q018-ANZ), “exploiters” (Q001-ANZ), and “despoliation” (Q002-ANZ) suggesting what to avoid. One respondent summed up their reasoning well saying

*As a hopeful grand[parent] in the future, as a parent, a person, and a teacher, I long for this sanctuary to be respected. When you hear of the potential e.g. for drilling under the ice to get oils/things humans need, I am devastated that such exploitation could even be considered against the cost of damage, not just to the immediate ecosystem (which will affect the whole earth) – but to our entire future generations. [...] Because of our proximity to Antarctica and all she means to the earth – I feel we have an added special responsibility (as a pioneer nation) to take care of Antarctica and her future.*

- Q001-ANZ

From benevolence for direct family members, to universalism for the ecosystem, and the earth in general, the values explained above were commonly cited as contributing to other respondents thoughts for the future linking in with the values they hold as part of their personal identity (Schwartz, 1994; Kirby et al., 2001; Steel and Neufeld, 2012). The reference to responsibility also suggests a link between the respondent’s identity as a New Zealander and the continent of Antarctica. No one makes this more clear than the respondent who raises the issue of climate change with a personal anecdote about how they had never felt quite so close to the effects of a changing climate as “in the last few years when iceburgs (sic) have drifted so far North as Dunedin” (Q018-ANZ). This personal encounter not only supported the stories heard in the media and from other sources, it made the changes that future climate change might entail more understandable on a personal level. The question of resources and imagined outcomes reflects a more general consideration of the possibilities afforded by the passage of time, and in some cases the changing climate. One respondent suggests that “maybe global warming will offer us a new frontier that will be friendlier to enjoy” (Q008-ANZ) suggesting a positive

outcome from all the negativity associated with climate change. This inclusion of future possibilities demonstrates that the continent is not viewed solely as a static environment, but rather an ever-changing place with implications for the rest of the planet.

#### **4.2.8 Global Connections**

The least-referred to theme, Global Connections, nonetheless represents a set of ideas which reflect an important aspect of these respondents' perceptions of Antarctica.

The terms identified occur at two levels of connection, personal and general.

Incorporating both the personal and the more general social or cultural connections, this is similar to Massey's (1991) definition that identifies places as processes. The personal connection listed by one respondent refers to "Dundee, Scotland" (Q010-ANZ), where they first encountered Antarctica, beginning a lifelong interest in the continent. The more general connections are identified by other respondents as the "Antarctic Treaty System" (Q003-ANZ) and "territories" (Q018-ANZ), which are cultural or social links drawing Antarctica in to the global system of politics. These connections are unique to Antarctica and shape respondents perceptions of the place.

#### **4.2.9 Linkages between themes**

Although the themes have been identified here separately, they are closely interlinked and it is the manner in which they are woven together which produces the unique perceptions held by each individual respondent (Basso, 1996; Cronon, 1992; Lippard, 1997). This can be best assessed by looking at response complexity and the connections between specific themes.

An examination of demographic data showed no distinct influence of either sex or age on complexity scoring ( $r_{\text{age, cxy}}(28) = -.21$   $p = \text{n.s.}$ ,  $r_{\text{sex, cxy}}(28) = .76$   $p = \text{n.s.}$ ). This is in following with what Baker-Brown et al. (2005) found in their survey of various integrative complexity studies. The demographic variables of education level and whether a participant was born in New Zealand or overseas showed very limited evidence of influence on complexity scores. The only complexity score of 6 was attained by the participant with a Masters degree or higher. The possibility of a relationship between these factors is supported by Baker-Brown et al. (2005) who state that, while complexity



is a “relatively stable personality characteristic or ability [...it may be modified by] certain experiences (including training in adulthood)” (p.394). The fact that the highest complexity scores were achieved by participants who were born in New Zealand suggests the possible influence of increased exposure to Antarctic information in New Zealand through school lessons, news stories, and museum exhibits. This could lead to a wider array of information being integrated into the overall Antarctic perceptions held by individuals.

Although complexity scoring allows for a quantitative assessment of individual responses, an important part of understanding complexity relates to how the various themes identified are linked together. This incorporates both the differentiation of, and integration between, themes, and leads to the unique conceptions of Antarctica garnered from similar information. Of the thirty questionnaires, only one listed one theme, one listed four themes, one listed five themes, and one listed seven themes. The remaining 26 respondents listed between two and three themes. The distinct way in which these themes are put together by individuals, theme co-occurrence, provides a preliminary way to examine the basic links between the identified themes.

A network can be created to visualise the co-occurrences identified by in the questionnaires. This is done by counting the number of times two themes are linked by different respondents. Each person is limited to one instance of a link. The counts are then classified into four groups, weak (1-2 connections), moderate (3-6 connections), strong (7-10 connections), and very strong (10+ connections). The resultant network (Figure 4.4) illustrates a group schema, or an overall, group approach to how New Zealanders without direct, personal experience perceive Antarctica. The figure shows that the strongest connection is between the Physical Characteristics and Wilderness themes. A total of 13 respondents make this connection in their questionnaires. The next strongest connection is seen between the Physical Characteristics and New Zealand themes, with eight respondents identifying this link. There are five connections classified as moderate, between the Wilderness and History themes (n=3), the Wilderness and Danger themes (n=6), the Physical Characteristics and History themes (n=5), the Physical Characteristics and Danger themes (n=4), and the Physical Characteristics and Current Use themes (n=6).

The remaining 13 connections have all been classified as weak connections, with only one or two respondents highlighting them in their questionnaires.

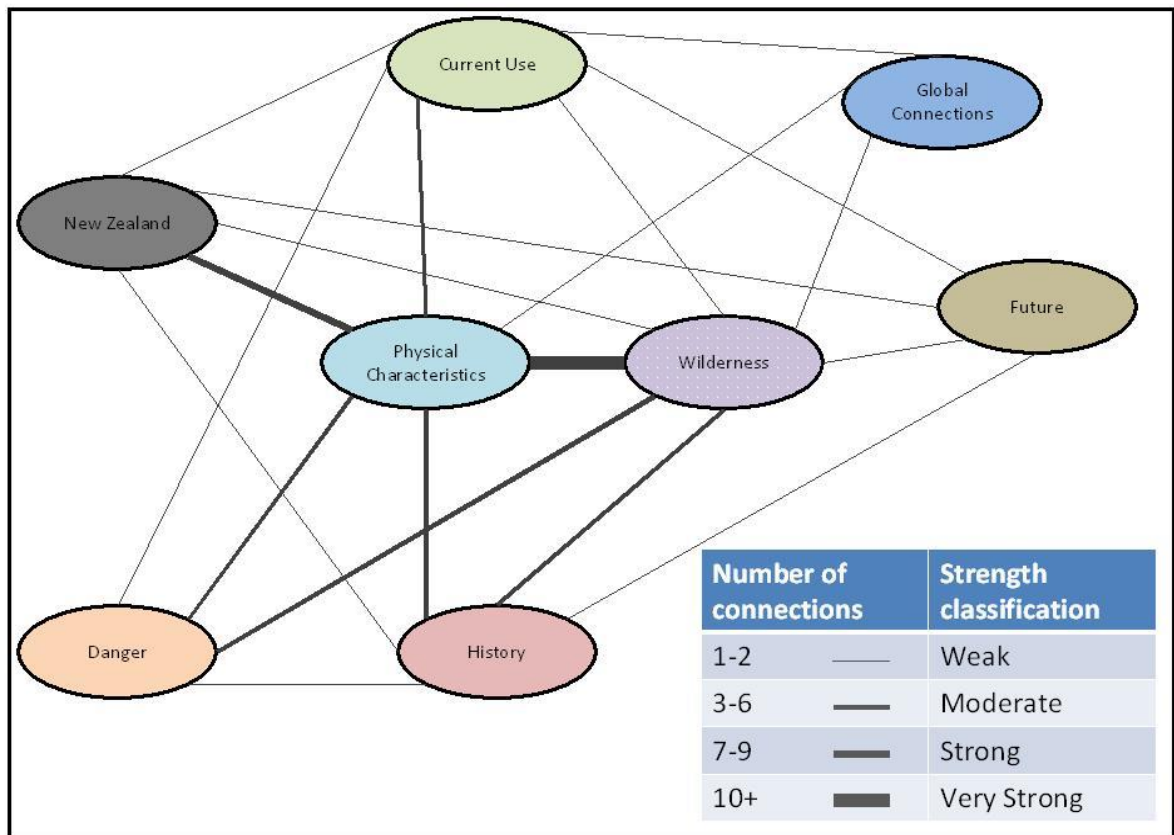


Figure 4.4 Theme co-occurrence seen in questionnaire responses. Line thickness relates to strength of co-occurrences as determined by a normalised link count across all questionnaires.

A very strong connection between Physical Characteristics and Wilderness suggests a strong relationship between the physical characteristics of Antarctica and the sense of wilderness associated with Antarctica. Summerson and Riddle’s (2000) work on the wilderness and aesthetic values of Antarctica supports this, as he found a strong correlation between the visual impact of human activities in Antarctica and perceptions of wilderness. And while many of Summerson’s respondents have not visited Antarctica themselves, their main sources of information are based largely on their own and others sense of sight. One respondent writes, “when I picture Antarctica in my mind, it is of a icy, white landscape. Looking out to sea, dotted with icebergs, I imagine I am the only person on the earth. Alone in an unhospitable landscape. Harshly beautiful, tranquil and savage” (Q024-ANZ). The visual elements of the landscape are tightly woven into the respondents’ idea of Antarctica as a wild, open, and empty place. Another connection

observed in the questionnaires is drawn between the physical characteristics of Antarctica and the personal interests of respondents in wilderness they know. One respondent cites their enjoyment of skiing on snow and ice at home and relates it to the “potential” for adventure in Antarctica portrayed by the media (Q016-ANZ). Both of these approaches demonstrate the very strong link between the Physical Characteristics and Wilderness themes identified in the questionnaires.

The strong link between the Physical Characteristics and New Zealand themes demonstrates the idea of a New Zealand connection with Antarctica as very much set in place. This is demonstrated by respondents who relate symbols of New Zealand with a landscape of specific physical characteristics found in Antarctica. One, often repeated, example of this can be seen by respondents connecting Scott Base to terms such as ice, penguins, cold, and long days. This suggests respondents see New Zealand participation in Antarctica as more than just a theoretical presence, but as a reality set within the physical confines of a specific environment.

The five moderate connections all link back to either the Physical Characteristics or Wilderness themes. This emphasises the central role they play in respondents’ sense of Antarctica, as already established from their high individual occurrences across questionnaires. The linkages between the Danger, Current Use, and History themes and the Physical Characteristics theme act to locate these themes within a specific place that is Antarctica. Danger is directly related to physical characteristics through the extreme nature of the environment causing dangerous conditions (Q029-ANZ). Current use again relates directly to the physical characteristics, as it is the animals, the climate, and the landscape which is linked to both the scientists (Q012-ANZ) and tourists (Q003-ANZ) in Antarctica. The History theme links to the physical characteristics of Antarctica through the conditions explorers are thought to have experienced and the places they are known to have been (Q003-ANZ, Q025-ANZ). The connections between the Danger and History themes, and the Wilderness theme demonstrate how these two themes form an important part of the definition of wilderness in Antarctica for respondents. Danger is an integral part of many people’s understanding of wilderness and this is evidenced by how respondents have linked the two themes using terms reminiscent of the trade-offs between risk and excitement or adventure (Q016-ANZ, Q029-ANZ). The History theme

is connected to wilderness through the idea of the explorer being the first to visit a landscape “untainted by civilization” (Q017-ANZ) and the adventures had there (Q025-ANZ).

Another important aspect to consider in this assessment is the lack of expected connections. One such missing connection is between the Physical Characteristics and Future themes. While terms such as preservation and protection are linked directly to the Wilderness theme, it is the physical damage to the landscape which is feared (Q001-ANZ, Q018-ANZ). This suggests that respondents with no direct experience with a place can easily express concern for the ideas or feelings evoked by that place, but may have limited understanding as to how best to go about protecting it for the future.

### **4.3 Summary of Findings**

Questionnaires (n=30) were received back from all over New Zealand, with a relatively even male to female ratio (12:18). The cognition section of the questionnaire resulted in a range of Antarctic themes being identified based on comparisons to literature and manual organization; these included Wilderness, Physical Characteristics, New Zealand, Current Use, History, Danger, Future, and Global Links. The manner in which participants connected their terms was assessed for integrative complexity, but no significant connections were found between the scores and any of the demographic information provided. The affect section of the questionnaire provided data to construct a circumplex graph which indicated the strongest response in participants was in the high arousal-high pleasure quadrant. The lowest response was found in the low pleasure-low arousal quadrant. The source section of the questionnaire indicated that news media was the most reported source of Antarctic information by all participants. The next most reported sources included advertisements, movies, and school lessons. Further qualitative analysis was done looking at how different themes were connected by all participants. This showed the strongest connection is between the Wilderness and Physical Characteristics themes (n=13), and the next strongest is between the Physical Characteristics and New Zealand themes (n=8). The most connected themes included the Physical Characteristics and Wilderness themes indicating the central role these aspects play in the senses of place respondents hold for Antarctica.

## **5.0 Interviews**

Once the data from the questionnaires had been examined, the interview protocol was finalised and two sets of interviews were conducted with two groups of individuals. Interviews served as the major source of information for this research. A variety of different participants were recruited through two different processes. The first group consisted of New Zealanders with no direct Antarctic experience recruited by the researcher around Christchurch and various locations around the South Island. The second group, of individuals with Antarctic experience, was recruited in New Zealand and at Scott Base in Antarctica during a trip for research purposes in November, 2010. The interview protocol for each group of participants varied somewhat as each group provided different opportunities to examine the role of experience in shaping one's sense of Antarctica and answering the overarching question regarding New Zealand's sense of Antarctica.

This chapter begins by outlining the results of the first two sets of interviews and provides a preliminary assessment of theme differentiation and integration. A more thorough examination of the complexity of participants' perceptions is then presented, to show how it changes across the two sets of interviews.

### **5.1 Indirect Experience New Zealanders**

The first group of interview participants were the convenience and purposively sampled New Zealanders recruited face-to-face from around the South Island, with the majority coming from Christchurch ( $n=6$ ). A total of nine participants ( $m=4$ ,  $f=5$ ) were interviewed with a range of personal experience with Antarctica. They ranged in age from 26 to 50 years ( $M=32.4$   $SD=8.35$ ) and had a variety of experiences with Antarctica, ranging from books and school lessons to memorial services and films.

Six topic areas were covered in these interviews, including what Antarctica meant to the participants, how they had first encountered the continent, how they continued to engage with and learn about the continent, whether they felt they had a connection with Antarctica (however they chose to define that connection), whether Antarctica was different from anywhere else on earth, and whether their perception of Antarctica had ever changed substantially and why. These topics explored similar areas as the questions

in the questionnaires, including cognition, affect, and behavior, while also allowing for further examination of how each of these connected and interacted.

Asking participants *what Antarctica means to them* elicited many different ideas and images that came together to form their overall perception of the continent (Figure 5.1). These ideas and images matched well with the themes identified in the questionnaire analysis. The Physical Characteristics theme was the most cited theme (n=7) with discussion of the cold climate, the polar night, snow, penguins, and more. The Wilderness, History, and Current Use themes were all cited by half the participants (n=5). Current Use included ideas referring to both science (n=4) and tourism (n=1). History references were broad, and highly focused on the age of exploration with references to Scott, Shackleton, and Amundsen. The Wilderness theme was identified through the use of terms similar to those found in the questionnaires. These included ideas around unspoilt landscapes, solitude, and adventure. The Future, New Zealand, and Danger themes were discussed by nearly one-third of the participants (n=3). In all cases, the Future theme referred to the potential change heralded by climate change, both good and bad. The New Zealand theme was expressed in a variety of ways, including references to Sir Edmund Hillary, the important role New Zealand, and specifically Christchurch, plays in ongoing research, and simply as an important territory for the country. The Danger theme encompassed broad ideas of the dangerous weather and the general difficulty of surviving in Antarctica. One respondent discussed the idea of challenge rather than danger. Each of these themes will be discussed in greater detail, including illustrative quotes in the following section.

Another area of discussion revolved around how participants encountered Antarctica, in the first place, as well as any ongoing interaction. Six general methods of initial encounter were cited: literary (n=4), school (n=4), media (n=1), the Erebus memorials (n=2), and the interview itself (n=1). Several of the respondents cited numerous methods of first encounter, such as reading history books in school (n=3), or attending the Erebus memorial in school (n=2). Separate, prior interests, were also cited as instigators for learning about Antarctica, including mountains and ships. Ongoing interaction elicited some similar methods, with literature (n=4), family or friends' stories (n=6), school (n=2), media (n=3), national memorials (n=1), as well as some new ones, including personal research (n=3), museums or special Antarctic centres (n=5),

photographs or art (n=3), documentaries (n=4), and films (n=2). Only one individual had no perceived ongoing interaction with Antarctica.

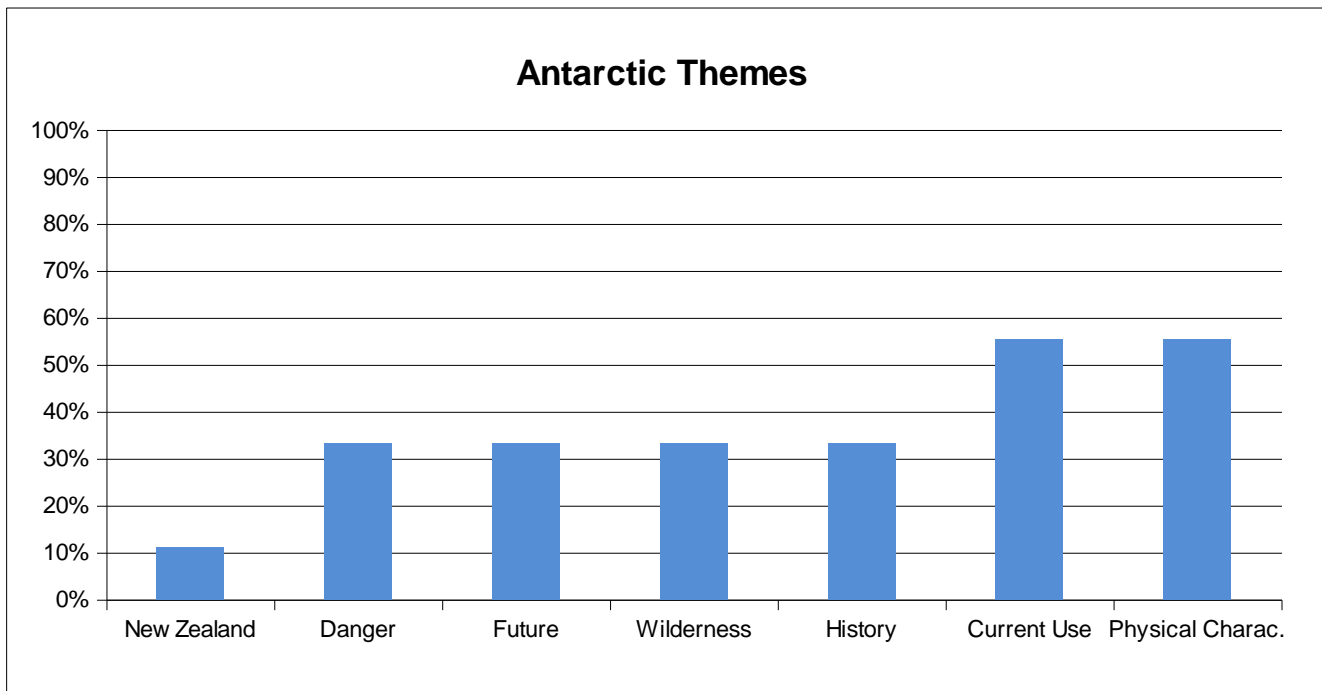


Figure 5.1 Theme classification for interviews with indirect experience New Zealanders (N=9).

The next area of discussion explored whether participants felt they had a connection with Antarctica. These separated into two general categories: personal connection and national connection. Six participants referred to varying ideas of national connection relating to proximity (n=4), history (n=7), current use (n=7), national identity (n=2), and simply because (n=1). The remaining four individuals, who expressed personal connections to Antarctica, also expressed ideas of national connection, through history, national identity, current use, and proximity.

Another area of discussion examined whether participants felt Antarctica was different to the rest of the planet. Only one participant felt Antarctica was no different from any other place on the planet. The remaining nine participants cited several differences they felt marked Antarctica as unique on the planet. These differences included location (n=1), climate (n=2), wilderness (n=2), size (n=1), survivability (n=4), ecosystem (n=3), politics (n=1), the possibilities it holds (n=2), and the participant's lack of experience there (n=1).

The final topic of discussion looked at whether the participants' perceptions of Antarctica had ever changed and, if it had, what had brought about this modification. Just under half the participants (n=4) reported no substantial change in their perception of Antarctica. The other five participants reported that something had increased their interest in Antarctica a great deal at some point. Two cited family and friends' personal stories as making Antarctica more real in their daily lives. Two other participants referred to the discovery of a link between a personal interest and Antarctica as instigating a deeper appreciation for Antarctica. One participant discussed how moving to Christchurch had made Antarctica more real, through encountering its historic and current connections to the continent on a daily basis.

Table 5.1 Complexity scores for New Zealanders

<b>ID</b>	<b>Complexity Score</b>
NZA0611	-
NZA0411	<b>1</b>
NZA0311	<b>2</b>
NZA0511	<b>2</b>
NZA1011	<b>2</b>
NZA0111	<b>3</b>
NZA0811	<b>3</b>
NZA0911	<b>3</b>
NZA0711	<b>4</b>

Complexity analysis was also completed using a similar technique to that described by Baker-Brown et al. (2005). Responses to the first question (What does Antarctica mean to you?) were blindly scored for complexity twice. This was accomplished by scoring the response twice, and not looking at the initial score when scoring it a second time. A randomly selected response elsewhere in the interview was used to assign a third score. The first two scores were compared

for scorer reliability, while the third score was used for respondent consistency. If a difference of more than one point was found, the interview was re-assessed to determine an appropriate score.

Of the nine participants in this section, only one was deemed non-scorable as the interview was not recorded. The remaining eight interviews were scored to within one point variation (Table 5.1). One participant received a score of one, three received a score of two, three more received a score of 3, and one received a score of four. This distribution indicates an overall moderately complex view of Antarctica.



### 5.1.1 Themes

#### 5.1.1.1 Wilderness

The Wilderness theme maintained high importance across all sets of interviews, with some similarity in terms and phrases used to elicit this idea. Similar to questionnaire respondents, those who mentioned the Wilderness theme touched on ideas of beauty, adventure and fragility.

Similar to the questionnaires, the beauty aspect of the Wilderness theme was the most frequently mentioned. Respondents focused on terms such as “beauty”, “pure”, and “unspoilt”. They showed a great appreciation for the physical qualities of the Antarctic wilderness. One respondent explained how she saw;

*snow, especially snow that's not trodden on as pure and untouched. And I imagine that a lot of Antarctica is pure and untouched by graders, and builders, and liquefaction. It's not dirty like what we've got here.*

- NZA1011, 2:01

The purity imagined in Antarctica is contrasted to the dirtiness of Christchurch after the earthquakes.

The next most referred to aspect of the Antarctic wilderness was as a place of adventure. Respondents touched on two main types of adventure, the first in reference to literary encounters, and the second in reference to personal interest and experience. The idea of Antarctic adventure experienced through others, included both historic and contemporary figures. One respondent described how she enjoyed Antarctic adventure stories as they were about “people who have more exciting lives than I do” (NZA0311, 1:57). Another respondent expressed how reading about someone's adventures in Antarctica has influenced her work in outdoor education;

*I read their book on their trip and was absolutely fascinated by it. And what always stuck with me was how they could have done it. Actually, is that they been sea kayaking for about three weeks, and they'd realized they hadn't had a bath, or a shower, in that time and they really smelled. And it was obviously quite a calm day, and so they just stripped everything off and ran into the sea for a swim. And they kind of made this comment, you never*

*regret a cold dip. So I've relayed that story to a lot of groups I've taken out.  
And I've been swimming in these horribly cold lakes with them.*

- NZA0711, 9:23

Historic figures, such as Shackleton and Scott, also influenced respondents through their adventures. Their stories were often described by participants as an early introduction to Antarctica, inspiring further engagement with the continent (NZA0711, NZA0311, NZA0111, NZA0911).

Similar to questionnaire respondents, the fragility and vulnerability associated with wilderness was the least touched upon aspect of the theme; with only one respondent briefly raising the idea of Antarctica as an “endangered” place (NZA1011). The respondent did not expand on the exact threat to Antarctica, and instead used the term to simply describe a state of being.

#### 5.1.1.2 Physical Characteristics

The Physical Characteristics theme was a theme that remained relatively similar to questionnaire respondents, with many of the same terms and ideas being used by interviewees. The themes identified included descriptive words, climate, animals, light, and ice.

Descriptive words were the most commonly applied terms by participants as images of the physical characteristics of Antarctica. Ideas of size and colour, as well as quiet, played an important role in peoples’ concepts of Antarctica. Half of respondents refer to the expansive size of Antarctica as contributing to their perception. The idea of size was linked directly to the colour white by one participant, who suggests that with the beauty of Antarctica comes, “just the vastness. Because it’s so, sort of, white, and it is such a huge place” (NZA0711, 1:15). White was also discussed as being a symbol of the purity of the environment (NZA0111). One respondent summed up these descriptive qualities well, describing Antarctica as;

*Very white. And very cold, but very beautiful. What's beautiful about it?  
You can tell I'm a mother, the first thing I think of is the quietness.  
Although, I know logically, it's not always a peaceful place, the weather*

*and everything can be very noisy. But it seems peaceful and not crowded.*

- NZA1011, 1:15

Climate was also remarked upon by participants, mostly focusing on the cold temperatures one might encounter there. Other climatic features listed included lack of humidity, the wind, and one participant included white-out as a specific climatic event. The white-out event, when high winds blow snow into the air limiting visibility, was used with reference to the stories passed on by the participant's husband, who did have direct experience in Antarctica (NZA0111).

Penguins and birds were the most mentioned animals, with the remaining discussion more broadly mentioning "wildlife" in general. One participant closely linked beauty with the presence of birds, "I often look at the wildlife of a place. And because there's no humans there and it's more a land of penguins and, sort of, you know, wildlife, more than humans" (NZA0711, 1:34). Other participants simply included penguins in a listing off of different terms and ideas they associated with Antarctica with no further explanation of how they fit into their overall image. The broader term of wildlife is raised as being a part of the environment, but not as important as features relating to the other physical qualities explored above.

Some of the least mentioned physical characteristics included ice, snow, and light. One participant referred to "the breaking of ice shelves [...] on the news at the moment" (NZA0511, 3:51) and the ongoing climate change also explored in his overall perception of Antarctica. Snow was also discussed by a participant as being something familiar from childhood that drew her to Antarctica. Finally, light was discussed by one participant who referred to the "special and confusing" nature of the polar light in Antarctica (NZA0111, 15:12).

#### 5.1.1.3 New Zealand

For participants with no experience in Antarctica, aspects of the New Zealand theme included the connections between the Lyttelton Harbour and Antarctic activities, both historic and contemporary, and the New Zealand territorial claim (NZA0811). One participant discussed how moving to New Zealand, and especially Christchurch, had

made Antarctica more real, as it brought him closer both physically and mentally (NZA0611).

#### 5.1.1.4 History

The history theme changed little across all interview participants. Focusing almost exclusively on the heroic era, some participants also mentioned Sir Ed Hillary and the Trans-Antarctic Expedition (TAE) or the Erebus disaster. For three participants, their first memories of Antarctica came from reading historic accounts of early explorers there (NZA0111, NZA0611, NZA0711). One participant explained her first encounter with the explorers of Antarctica;

*I was ten years old, and my father bought me a book about explorers and researchers. It was from a petrol station and you could put stickers on there, but there was only few stickers and a lot to read. And the first thing I read was about Captain Cook and the next was about Scott. And that was my first touch of the Antarctic, in this book when I was ten.*

- NZA0111, 19:04

For other participants, it was attending an Erebus memorial that first brought Antarctica into their consciousness (NZA0811, NZA0911). For all these participants, the stories of past events in Antarctica acted as an introduction to the continent.

#### 5.1.1.5 Future

For some participants, the future of Antarctica played a role in their perception of the continent. Participant concerns for the future arose for several different reasons, including hedonistic and benevolent values. One participant discussed his desire to see Antarctica and suggested it could be;

*A world park, as such, and restrict it totally, but yeah. . . . it'd be nice to, well this is me, only because I want to go there, it'd be nice just to be able to, Yeah, let's go to Antarctica for the weekend, type situation. Or spend six months down there.*

- NZA0911, 15:03

Another participant worried about the damage caused to the continent and stated that “we need to care about it [Antarctica] more, so that it's still there as a science opportunity, or as an opportunity for New Zealanders well into the future. It doesn't become, I guess, wasted, in terms of damage, or environmental damage” (NZA0811, 15:12). Finally, one participant voiced specific concerns against potential mineral extraction and the impact it might have on global systems and the health of humans worldwide (NZA0711).

#### 5.1.1.6 Danger and Challenge

For interview participants, the danger theme required some rethinking. The difference between danger and challenge is well explained by Johnston (1989), who defines risk as “an interaction of people and environment in which positive outcomes (i.e. challenge) are sought and negative outcomes (i.e. danger) may occur” (p.i). This suggests that participants with no experience in Antarctica might focus on the negative outcomes. Risk research by Sokolowska (2000) suggests that individuals with no direct requirements from a situation (i.e. no outcomes) tend to focus on the “worst possible outcomes” (p.342) of which they have heard, which for many New Zealanders might be the Erebus disaster. For participants with direct connections to people with experience, the positive outcomes (e.g. research results, beauty, enjoyment) are more evident and the dangers are transformed into challenges.

The differences between the idea of danger versus challenge are evident in some of the respondents descriptions of Antarctica. One participant focused on the hazards associated with the changeable and extreme nature of the weather, identifying “the white-out, [and] how dangerous it is, because you have no point for direction or orientation” (NZA0111, 16:00). However, two participants presented a different interpretation by referring to the idea of challenge rather than danger. One participant identified the challenge of working in Antarctica as a source for his desire to travel there. He suggests;

*you would experience it [Antarctica] better in a work capacity. It's all very well going down in tourist form and going ooh and ahh, this is nice, but to get to know somewhere, you've actually got to live and work within that environment. Yeah, you get a far better feel for it. And because it has so many significant challenges, as far as the environment goes, it would*

*create so many challenges within your job as well. You've gotta be aware that, no, today I can't do this because . . . and then go, right, what can I do. Yeah, that's the challenge of doing something that . . . well, maybe you actually have to do something, regardless of what the weather is and it has to be done. So it's that challenge of doing something that you've got no choice to do. Where you go, yeah, no, you really couldn't do that, but you do it anyway. So, yeah, it's the challenge side of it.*

- NZA0911, 21:57

Another participant, who works in the outdoor industry, discussed how her work had led her to;

*think you probably have to be quite a special person, to be able to actually withstand living in that environment. I'm pretty certain not everyone would want to deal with it. Even just from seeing that not everyone can deal with just going into the bush out of the city. So, to go even far more removed from what, I suppose, what an environment a human could actually easily survive in. As far as, yeah, as far as being able to get shelter, warmth, food, and actually live and that.*

- NZA0711, 4:24

For both participants, the remote dangers of Antarctica have been transformed into tangible challenges related to their experiences in their jobs.

#### 5.1.1.7 Current Use

The current use theme, with reference to both tourism and the broad area of science, was identified by half the participants, the majority of whom discussed scientific interest in Antarctica as the main current use of the continent, with climate change as the main topic of this interest (NZA0511, NZA0611, NZA0811). One participant summarised the importance of the continent;

*because it's still so pure. So we can do a lot of research that's a lot more, not pure, but controlled, rather than what we've done to the rest of the*

*world. Yeah, I do think it's hugely important to the ongoing future of the world.*

- NZA1011, 13:56

One participant discussed a family member's ongoing research on the continent and her hopes for future work there (NZA0111). Finally, two participants talked about the travel that many people partake in to visit the continent and the tourism that takes place there (NZA0311, NZA0811). One participant referred to his desire to visit Antarctica, but that he struggled with the financial barrier in going and finding information on tourism opportunities (NZA0811). And the other distinguished herself from those who would choose to go down there, as they "have got a gene missing or an added gene" (NZA0311, 0:40).

### **5.1.2 Summary of Findings**

This group elicited many of the same themes identified by the questionnaire respondents; these include Physical Characteristics (n=7), Wilderness (n=5), History (n=5), Current Use (n=5), Future (n=3), New Zealand (n=3), and Danger (n=3). Two participants referred to the idea of challenge instead of danger. The most widely cited methods for first encounter included through literature, and in school. For several participants, separate prior interests acted as gateways into learning more about Antarctica. All nine of the participants expressed ideas of national connection to Antarctica, this was explained through history (n=7), current use (n=7), proximity (n=4), national identity (n=3), and simply because (n=1). Only four participants expressed ideas of personal connection to the continent. Changes to participants senses of Antarctica occurred in just over half of participants (n=5), two due to family and friends' going down, two through discovering links between a personal interest and Antarctica, and one by moving to Christchurch and discovering the historic and ongoing connections on a daily basis.

## **5.2 Direct Experience New Zealanders**

The second group of interview participants included a selection of both base staff (n=4) and scientists (n=40) who were at Scott Base in November/December of 2010 and

one individual in New Zealand. A total of 44 interviews were conducted in Antarctica in various locations both on base and at field camps around Ross Island, plus one back in New Zealand. Participants were primarily recruited through face-to-face interaction with 14 being recruited via their project leader due to the logistics of organising field visits. Participants ranged in age from 21 to 55 years ( $M=37.6$   $SD=10.0$ ) and varied widely in their Antarctic experience, from 2 days to 5 years.

The 40 interviews with scientists followed a slightly different interview protocol than that used in New Zealand, as they were done in conjunction with another research project. Initially, these interviews were conducted by the author and her male supervisor together, but later interviews were conducted by either one or the other alone. The main question revolved around what Antarctica meant to the participant and explored the ideas and themes that came up. The four interviews with other base personnel followed the same interview protocol as completed with the New Zealand group.

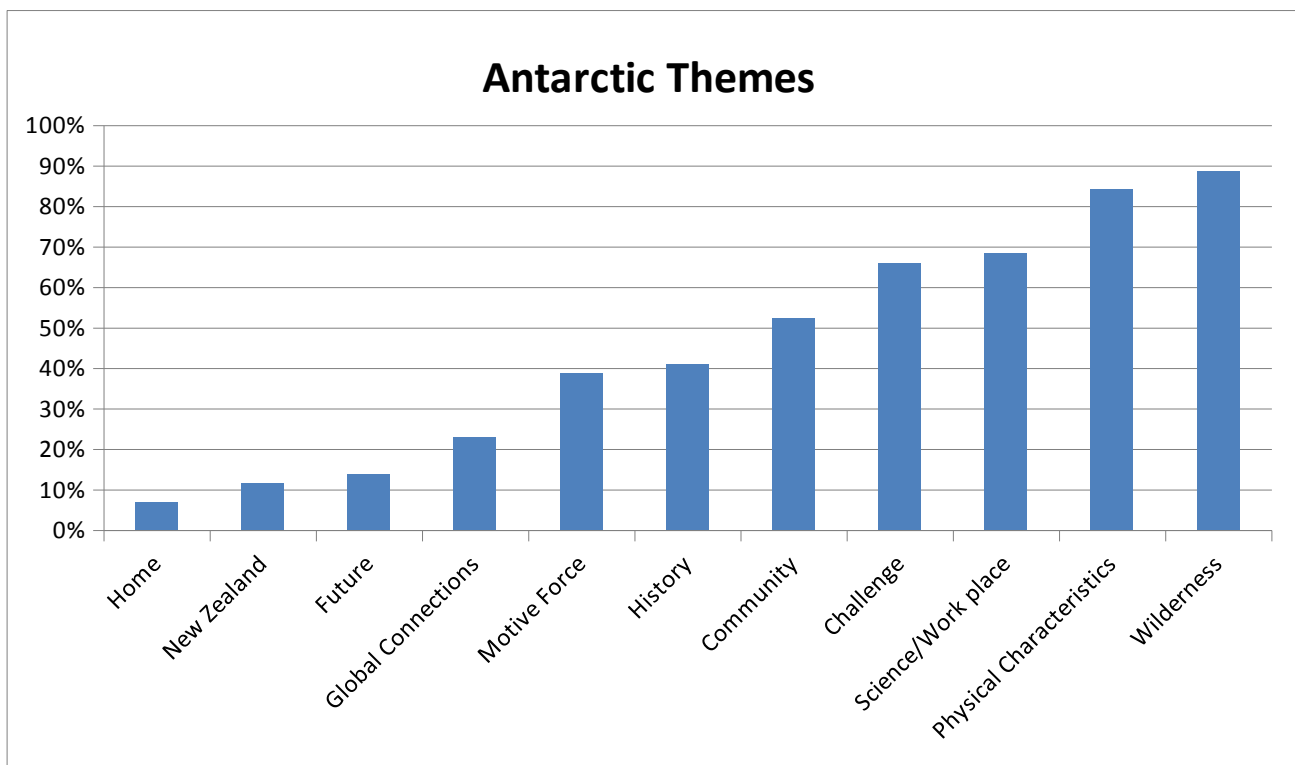


Figure 5.2 Theme classification for interviews with Antarctic interviewees.

The first question posed was what Antarctica meant to the participant. Similar to the first set of interviews, this elicited many different ideas and stories relating to how



each participant perceived Antarctica. These ideas and stories were then analysed for themes (Figure 5.2). Some of the themes from previous analyses were found to fit, some were modified, and some new themes emerged. The themes that remained the same included Physical Characteristics, Wilderness, History, Global Connections (from the questionnaire analysis), Future, and New Zealand. Themes that were modified included the Danger theme becoming the Challenge theme and the current use theme becoming the Science/Work Place theme. And finally, the new themes included Motive Force, Community and Home.

The most reported theme in this group was that of Wilderness (n=39). Respondents identified Antarctica both directly and indirectly as a wilderness; the former through broad terms such as wilderness and wild, and the latter through more specific terms such as pristine and stillness. There was an added reference by a number of participants to the surreal, or extra-ordinary, nature of Antarctica. The Physical Characteristics theme followed closely behind (n=37), with many participants identifying various physical characteristics of the landscape. These ranged from large processes such as the katabatic winds and the movement of ice to small details of the sound of crunching snow and the feel of cold. The next most related theme was that of Science or Work (n=30). Many respondents discussed how their science or research made up a part of how they viewed Antarctica. This was raised as both a method for reaching the continent, as well as a way of interacting with it. The Challenge theme came next (n=29) with many respondents discussing both the environmental and social challenges they faced while in Antarctica. Most of these were presented in a positive light. The theme of Community was next most identified (n=23). This theme emerged from the repeated mention of the different people respondents felt they were able to meet in the Antarctic and the unique connections this provided them. The History theme followed with just over a third of participants (n=18) identifying aspects from both human and ancient history as part of their view of Antarctica. The Motive Force theme (n=17) was based on statements of attachment or Antarctica acting as an influence on personal identity. The Global Connections theme (n=10) related to both the political and environmental systems linking Antarctica to the rest of the planet. The Future theme (n=6) was based on ideas of Antarctica as a time capsule, holding information about the past to learn about the future,

as well as a place in which to inspire the next generation of scientists. The New Zealand theme (n=5) included terms that related to New Zealand innovation used in Antarctica, as well as historic connections through explorers and the Erebus disaster. Finally, the Home theme (n=3) arose from direct reference to Antarctica as home. These themes are explored in more detail, including illustrative quotes, in the section to come.

Due to the difference in interview protocol, participants in this group were not asked about how they may have first encountered Antarctica, any connections they felt they had, or any differences between Antarctica and the rest of the world. Questions about any ongoing interaction with the continent were also left out due to the obvious personal experience and professional research they were conducting at the time of interview. Changes in sense of place were discussed with respondents and the major themes they discussed are presented below.

There are two major groups of perception changes discussed, those from first encounters and those from multiple encounters. While just over half of participants were on a second or subsequent visit (n=23), not everyone in this category had had their perceptions changed because of this. Of the participants who did express some form of change due to multiple experiences (n=12), only one also expressed changes in their views from their first encounter as well. There were seven participants who made no mention of any changes to their perception of Antarctica. Within each of these two major groups, several themes emerged. Two themes were similar in both multiple and first encounters. These included perceptions of comfort (multiple n=2, first n=4) and social organization (multiple n=4, first n=12). The remaining theme in the multiple encounter group included the perception of Antarctica as a place of work (n=6). The remaining theme in the first encounter group was perception of the environment (n=13). There were also a number of participants who said that they noted no change in perception (n=5) for a variety of reasons.

Complexity scoring was completed for the direct experience interviews using the same technique as described in the indirect experience section. Three participants were given a score of one and three participants were given a complexity score of two. A large number of participants (n=18) were given a complexity score of three. Nine participants were given a score of four and six participants were given a complexity score of five.

Finally, the five remaining participants were given a complexity score of six. Complexity scores were then ordered and compared to the number and length of each participant's visit.

### **5.2.1 Themes**

#### **5.2.1.1 Wilderness**

The Wilderness theme was again identified by a large number of participants, with some similarity in terms and phrases to previous interview groups. As with previous respondents, those who evoked the Wilderness theme touched on ideas of beauty, inhospitality, adventure and fragility. Participants also made reference to the surreal and sublime qualities of Antarctica.

Similar to the questionnaires, the beauty and personal elevation aspect of the Wilderness theme was the most referred to. Participants also made mention of the beautiful qualities of Antarctica discussing the pristine and beautiful nature of the continent. However, the majority of the discussion by these participants focuses on the personal elevation, or transcendental, aspect of their encounter with Antarctica. Discussion revolved around the “awe inspiring” nature of the continent, the “humbling” experience of the “vast” landscape, and the “indescribable” mysteries that draw them to Antarctica. Two respondents refer to the awesomeness of feeling like you are “transporting yourself back in time” (S1010, 5:25) or of “being able to see a world none of us were born in” (S5010, 2:30). These respondents showed a great deal of appreciation for the transcendental experiences that the Antarctic wilderness afforded them.

The idea of adventure was mentioned by these participants more than any previous respondent group, with reference to the “fascination” and “excitement” of the place. One participant described his sense of adventure,

*particularly when you're off base, when you're out in the wops, you have a chance to connect with the environment, with a challenging environment in a way that's very rewarding, it's also very humbling. I'm sure you've both experienced it, you know, just the magnitude of the place. I think there's something rewarding and satisfying through, you know, really feeling that*

*you're out there, you know, in the elements, making those decisions and getting stuff done.*

- S3110, 7:29

The connection between work and adventure was a common thread throughout the interviews (SS0310, S4810, S3710, S1810, NZA0211). One respondent described how he told the Queen about his work in Antarctica; “We try to be as professional as possible, but it’s still an adventure. [...] It’s something that’s really interesting and exciting and perhaps out of the norm” (S0910, 12:26).

Participants described how their ideas of alienation and inhospitality were drawn from their experience in the Antarctic environment. They discussed personal experiences with the harsh environment, how it influenced their research and how it separated Antarctica from anywhere else (S1410). Two respondents even used the term “scary” to describe the unknown nature of dealing with the weather (S0410, S0810). One of them explained the relationship as “awesomely beautiful, and still awesomely scary, because you really can get caught out so quickly. The weather can switch very quickly. Yeah, it’s pretty amazing” (S0410, 6:45). Much of the references to alienation and inhospitality related quite closely to ideas of adventure and the challenge theme. This is highlighted by one respondent who described Antarctica as a “very special place, and it’s a very unforgiving place as well. We’re here only because of our technology, you know, we’re not like seals, we can’t just live in the ocean and . . . we’ll die out there without all the clothing and things” (S1910, 6:29). For many, it appears that the sheer difference from their regular lives is one of the biggest things that made Antarctica special.

A final topic raised by participants revolved around the sublime and the surreal. Most commonly, participants explained how their experience of Antarctica went beyond their imagination and left them feeling as if they were in a dream-like state. The experience of the surreal was best defined by one participant who described it as “so out of the ordinary, but it’s still, it is real. It’s so real that it’s kind of weird. Compared to say, sitting in front of the computer all day, which is very, you know, not real, or something. [...] To be just, you know, in the moment” (S4710, 6:07). This can also be seen in the unexpected dichotomy highlighted by other participants of the perceived isolation of being in a wilderness and the conveniences still available there. One participant described

how surreal it felt “in McMurdo buying key rings and going ‘oh yeah, we’re in Antarctica” (S1710, 8:15). For another, it was the receipt of mail almost daily in their camp (S5010). For others, it arose by combining the wilderness aspects of alienation and transcendence. These feelings were attributed to the intense work schedule, the overwhelming nature of the stark environment, and the lack of circadian cues from the sun (S3110, S1010, S0310). This combination of factors led one participant to describe Antarctica as;

*It’s almost like a dream world. In the sense that we do crazy hours, the environment is so challenging, that I often have the experience that I’ll go back home and, even within a week, I’ll think, you know, was I actually in Antarctica? It almost becomes like you actually dreamt the whole thing. And certainly not wanting to suppress anything, because it’s generally a very, very good time. I just think it’s the intensity. So, we tend to work around the clock, which messes with your sleep patterns and whatever, you know, obviously with the 24 hour sunlight there’s an influence there. But yeah, sort of like a dream, sort of like, because of the intensity, I think, I mean you go back and it’s so safe and cushy and easy, [...] it’s just so different. Everything about this place is different from, I guess what you might call normal.*

- S3110, 14:25

For other participants, the experience was likened to being on an outer space base, kept safe in a self-contained habitat located in an unexplored, recently encountered, and huge landscape (S1510, S3210). This commonly led to feelings of humbleness and being reminded of one’s place in the world;

*I did come down with the expectation that it would be, that it would feel very, very big. And in some ways, I couldn’t have anticipated how small I would feel [...] very, very, very insignificant, and that’s quite a nice feeling. [...] I’ve found it an extremely contemplative environment, verging on spiritual.*

- S1110, 7:15

Other participants shared these feelings of contemplation and place-in-the-world, based largely on the sheer vastness of the environment (S0810, S1910).

### 5.2.1.2 Physical Characteristics

Direct experience participants, while highlighting some similar terms to those mentioned by other respondents, also tended to link those physical characteristics to sensual perception and personal experience. The themes identified by both groups included descriptive words, climate, animals, light, and ice. New terms associated with the theme included locations and topographical features.

For direct experience participants, the enormous size and scale of the landscape is a feature many explored,

*The vastness of it [Antarctica]. On the sea ice, everything is flat, so you have this 360° view around you of these glacier carved mountains and glaciers and there's a bit that's nothing but the ocean [...] But I mean, that sort of expansiveness is something that I try and convey [to friends and family]*

- 13:35, S1910

For many, the size of the landscape related directly to how they felt within it; “It was so huge, just expansive and massive, that we just, it was very difficult to take in and I think all of us started to really feel, I use the word embraced, but just engulfed in this incredible place” (3:45, S2110). Colour was not quite as important as size, but was referred to by some through what they saw around them, “you look down, and you look up and it’s just pristine white everywhere” (6:46, S4210). The quietness and stillness of the landscape were also explored as part of participants’ perceptions. “When you’re in the field, it is very, very quiet. If the wind’s not blowing, there’s no noises. There’s no trees or plants to move around, there’s no animals [...] there’s no life. So it’s the silence, I think, that’s a really big thing” (7:47, S4810).

Climate features were also discussed by participants as playing a part in their perception. Cold temperatures were the most common point of discussion amongst respondents. But unlike the participants with no direct experience, the most common way participants with experience discussed this aspect was through stories of sensual experience. “The cold surprised me. [...] It was not the kind of cold I was expecting, I mean, we stepped out and it was like a sting of cold. And the cold is not miserable down here, the cold is really, really sharp and when it starts to get you, it gets you” (7:45, S1110). Others were more detailed in explaining the impact of the cold on their fingers

and lungs (S0510, S3410) and how the temperature impacted their research (S3910). Other climate or weather factors that emerged included reference to the extreme nature of the wind. “We had some storms up at Scott Base where the whole ship rocked. And snow came in every place it could find a little bit of a gap” (5:36, S0410).

Similar to those participants with no experience in Antarctica, the perceptions of participants with experience revolved around the idea of wildlife in general and penguins in particular. A number of participants told stories about their personal encounters with penguins and how the inquisitive nature of the birds led to unique experiences with a wild animal (S3810, S0210, S1110, S5010). One participant shared a memorable experience he had had while out in the field;

*One of the highlights for me, was about a week and a half ago we went out to have a look at the penguin colony on the boundaries of the ASPA [Antarctic Specially Protected Area] and towards us came a big group of emperor penguins, just across the sea ice. And they came within about 100 metres, but they were trumpeting and calling and, you know, it was just one of those special moments where we just kind of sat back and took in the beauty of nature really. And just let them do their thing and they probably didn't even know that we were there.*

- S0210, 5:34

Other participants simply made note of the unique wildlife that called the Antarctic home (S1010, S3310).

Ice was another aspect of the physical characteristics theme that was mentioned by some participants. The two major ways of exploring this aspect included the expanse and reach of these features, as well as through the more intimate detail of sensual perception like sound and smell. One participant described the sound and texture of the snow as polystyrene (S3210), where another talked about the spluttering of glacier ice on the stove as it was heated (S4210). Another participant remembered first smelling the ice when coming off the plane he arrived on. “My first, sort of, memory of Antarctica is when I got off the Starlifter and just that icebox smell. You know, it's like you face into an icebox. So, you sort of come out of the door and you're just confronted with this icy smell” (S3710, 10:13).

The distinctive light conditions found in Antarctica were another aspect of the physical characteristics theme raised by some participants. One participant described “a complete lack of any sense of days passing at all” (S0310, 5:44). Another talked about how sleeping habits changed due to the constant daylight, especially when camping (S4810).

Topographic features were another aspect of the physical environment touched on by participants with direct experience in Antarctica. The most common among them being the mountains, but glaciers and the variety of landscapes were also mentioned. Mountains were referred to in two main ways; as forming part of the initial draw to Antarctica (S4910) and as an important part of what provides the landscape with definition and beauty (S2110). One participant explains how,

*I've always gathered strength from the mountains around me where I live, and the mountains here were, I mean they were mountains too. I live in a mountain valley, so it was homey in that way. But they were so immense that it was like I could go absorb, you know what I . . . my familiar experience with the mountains could be even expanded further.*

- S2110, 19:56

Glaciers were similarly seen as “stunning” features of the landscape that drew much interest from some participants (S4810, S4210). The variety of different landscapes was also mentioned as an important aspect of the Antarctic environment, with one participant noting that many people forget that Antarctica is not just made up of snow and ice (S4810).

On a more specific level, participants with personal experience in Antarctica also mentioned distinct locations, usually relating to places where they had either visited or done research. Although there were relatively few direct references to specific locations as important aspects of the overall sense of Antarctica, the narratives used by participants to describe other aspects were inevitably embedded within a specific location. This is perhaps best described by one participant who viewed her multiple Antarctic experiences in various places as building her “web of connections” leading to her perception of Antarctica changing from a nebulous white cloud to blobs of experience connected via people and the movement of objects (SS0410).



As many of the examples demonstrate, for those participants with direct experience in Antarctica the physical environment is closely linked to sensual perception. One participant describes how one's senses are stimulated from upon arrival;

*You get off the plane and it's cold, and it's bright, and it's dry, and your body tends to complain, and you're weighed down with all these clothes to stay warm and it's big. [...] It's outside the realm of what you, you know, it's like a stimulant to your brain.*

- 4:30, S3410

Another participant discussed how visual and aural stimuli are easily captured and taken from Antarctica to be shared with family and friends elsewhere, but things that are felt or known through multiple senses are impossible to communicate to people with no experience in Antarctica (S2110). This is a commonly touched on aspect of the physical characteristics theme, with many participants explaining that there were aspects they would be unable to explain to people back home – most notably, the expansiveness of the landscape.

#### 5.2.1.3 New Zealand

The New Zealand theme showed a marked decrease by participants with experience in Antarctica. Of the experienced participants, New Zealand was only mentioned by five participants. For them, the New Zealand theme was raised through the connection of people like Sir Edmund Hillary (SS0310, SS0110, NZA0211) and the ongoing science community (SS0210, S3710), as well as the Erebus disaster (SS0110). For the one participant, the connection with New Zealand incorporated ideas of social history, personal experience, and identity. He weaves the New Zealand sense of identity into the mythological figure of Sir Edmund Hillary and his adventures in Antarctica.

*A significant number of kiwis have been down, worked down there. So the stories. . . I think the explorers and so forth, that might explain quite a bit as well. Sir Edmund drove his tractors, classically, typical Sir Ed, in classic kiwi style as we like to think it. Yeah, he was supposedly supporting his buddy Fuchs' expedition to be the first to drive to the pole and he just got a march on them by driving up in his Massey Fergusson tractors. And*

*that sort of captured the imagination of kiwis, that's sort of something that we're pretty proud of. That sort of legacy. That's how New Zealanders like to think of themselves. It's quite mythological really. It's not really like that, but we like to think we are. When some of us manage to do amazing things like that, we all like to think we're capable of it.*

- NZA0211, 31:56

Another participant felt that Antarctica had always been “a part of us [New Zealand] by default” (26:00, SS0110), due in part to growing up in a family with experience in Antarctica.

#### 5.2.1.4 History

For participants with experience in Antarctica, the history theme was much the same as for those with no experience. While not discussed with reference to their own first encounters with the continent, participants did mention early explorers, the TAE, and prehistoric Antarctica. The explorers aspect of the history theme is associated with the mystery and challenge of the environment (S3110), as well as the romance and imagination of the times (S4510). The historic huts are also highlighted here as places where one can “step[...] back in time” (S0510, 8:00) visiting the places the early explorers like Shackleton and Scott built during their expeditions. More ancient history was also touched on by a number of participants, as it “gives us a chance to see a world that none of us were born in” (2:20, S5010). Other participants referred to the “amazing archive of climate” (S1710, 3:10) or time capsule characteristics of the continent with reference to their own and others research (S1910, S3210). The time capsule characteristic of Antarctica is described by one participant;

*Why are scientists here? It must have something about it. I think, I dunno, you can just learn so much about it [be]cause things have been frozen for so long that it's the way things were back, I dunno, back when the continents were back together. [...] It is a time capsule, because people drill down ice and test how much carbon dioxide inside the snow has built up. I dunno, it captures things.*

- S3210, 29:02

For direct experience participants, the historic theme not only represents events involving people, but also the physical world around them. This transforms history from disconnected stories to a narrative that contributes to the present scientific research, and the future direction of planning and management.

#### 5.2.1.5 Global Connections

The global connections theme touched on aspects that ranged from the international collaboration observed and experienced by some to the impacts the various ecological systems have on the rest of the world. International collaboration was the most reported on aspect of this theme, with participants discussing

*the high degree of international collaborations [...] We rely on a number of other nations, be it the Australians, be it the Americans, be it the Italians, be it the Canadians to fly aircraft here, be it the Germans, they sometimes lend us their base. So I think of Antarctica as being a really excellent model for international collaboration. And obviously, the treaty, that sort of legislation behind how we live and operate here is testament to the two nations collaborating and getting the job done. So I think that's also quite important and I think, rewarding to be a part of a system that is, if you like, multinational. I find that personally quite satisfying.*

- 3:55, S3110

All participants who mentioned the collaboration expressed admiration at the ability of multiple nations to work together. One participant refers to the symbolic nature of Antarctica due to the political climate created in Antarctica through the Antarctic Treaty and the peaceful discussions that occur there (S1110). Beyond politics, the global connections of Antarctica were also identified through science. These are recognised, both “as a very sensitive barometer or yardstick for some of the environmental, globally environmental impacts that we’re having” (2:40, S3110), but also through “the climate in Antarctica driv[ing] the climate in the entire world” (3:42, S2010).

#### 5.2.1.6 Future

The Future theme was identified through the benefit of science for the future of the continent and the rest of the world, as well as the benefit for inspiring the next generation of scientists. The threat of climate change was discussed by participants with and without experience in Antarctica, but where the participants with no experience leaned towards fear and the unknown, participants with experience in Antarctica discussed the role science plays in being able to find solutions for the future. One participant talked about how “we’re very aware, these days, I think, through the focus on Antarctica being able to tell us something of the past to help us make decisions about the future” (S1910, 5:02). Others were more specific as to how their own research might answer specific questions relating to climate change (S2110, S3110). Another important aspect of the future theme raised by participants focused on inspiring the next generation of scientists to continue the research there. One participant bemoaned the loss of other nationally significant inspiring scientific programs, but stated that “climate change absolutely points to Arctic [and Antarctic] research as the next cool thing that we can show kids. So I had every intention before I came as using this as scientist bait” (S2110, 27:00).

#### 5.2.1.7 Danger to Challenge

Direct experience participants’ discussion of this theme focused on the positive outcomes, or challenges, their work and experience in Antarctica had created, rather than the negative outcomes, or dangers, potentially encountered. Four interrelated aspects were discussed by different participants, including environmental challenges, work challenges, living challenges, and social challenges. Environmental challenges stemmed from both the weather, but also the “tremendous sense of isolation and of just a big landscape with no sign of humanity, it’s just this sort of vastness. And it is, to me, it is incredibly beautiful, but you also have to remember that it can kill you quite easily” (S1110, 5:33). This mix of threat and beauty, reminiscent of the Wilderness theme, was fascinating for some and seen as an enjoyable aspect of work there. This is highlighted by one participant who describes “the harshness of it [Antarctica] and the difficulty of working and doing things here, you know, is interesting and exciting and stimulating”

(S0710, 2:11). For another participant, it was the challenge Antarctica offered his job that drew him to it. “For me it’s been a way to quantify my abilities in my profession and to test myself in my profession for this job. [...] Initially for me, it was a test and a challenge for myself I think” (SS0310, 2:26). Much of the science in Antarctica is done while living in camp, which some found “kind of daunting, when they just drop you off and it’s, like, wow, there is nothing here. It’s all you by yourself” (S4710, 3:45). Another aspect of remote camp life is the small community of people with whom one lives. One participant referred to the challenges the social aspect can have on one's perception of Antarctica (S5010). The positive outcomes of any negative, or dangerous, situation are the focus for these participants, and the challenge of attaining them (i.e. research results, personal enjoyment, social status) adds to their overall perception of Antarctica.

#### 5.2.1.8 Current Use to Science/Work place

No participant with direct experience referred to tourism or travel. However, there was a large focus on their own work, changing the theme from the broad idea of *using* Antarctica to focusing specifically on *how* Antarctica *is used* for science and as a place of work with relation to their own experience. This transformation of the theme from broad to specific is closely in line with the theorising of Relph who emphasised the importance intentionality in place plays in how people perceive an environment (1976). The purpose with which one encounters a space shapes not only their actions within that environment, but how they view it and what they see. One participant remarked on how their perception of Antarctica is shaped by their role “as a scientist, I’m drawn to the role that science has to play. [...] Particularly the sea ice, which is what I’m involved with working on as much as possible and wanting to use that as a model for understanding primary production” (S3110, 2:24). This focus on the personal was common and extended beyond simple research to the “huge influence [Antarctica has] on everything I do, because my research is based down here, a lot of my teaching is on Antarctica. I think about Antarctica all the time” (S1810, 2:45). Antarctica is viewed by many of these participants as a workplace or an office, with deep integration into the professional identities of many of those interviewed (S0910, S1710, SS0111, SS0311)

#### 5.2.1.9 → Motive Force

This theme emerged from respondents identifying Antarctica as a force that has exerted influence on their personal identity. Identity is an important part of many place theories (Gustafson, 2001; Stedman, 2002; Knez, 2005). In his examination of the meanings of place to individuals, Gustafson (2001) finds that “places are also described as a source of self-identification”, with respondents commonly “using the place [...] for telling others who they are” (p.9). In their work on place-identity, Proshansky, Fabian, and Kaminoff (1983) state that “the subjective sense of self is defined and expressed not simply by one’s relationship to other people, but also by one’s relationships to the various physical settings that define and structure day-to-day life” (p.58).

This impact on identity is evident in a number of different ways. One participant felt that her memories of her times in Antarctica were important to who she was as a person (S4410). For others, Antarctica exerts a guiding force on the direction their life takes. One participant made explicit reference to this when he described Antarctica as a “stream that runs through my life that is, you know, always constantly this source of just amazement and wonder, but also a guiding scientific stream throughout my life in terms of a source of problems and interesting things to look at” (S4910, 2:21). Other participants talk about feelings of completeness or attachment with regards to Antarctica, gained from both the intense nature of their experience (S2110) or prolonged and repeated exposure (SS0410, S1210). The act of reaching Antarctica also emerged as an important part of respondents’ identities. Several respondents expressed long-held dreams of eventually reaching Antarctica and felt their achieving this goal was a defining moment in their lives (SS0110, S4510, S3610, S1610, S2010). One respondent expressed this by describing Antarctica as “the end of a journey, which started about 20 years ago. So, yeah, it’s a defining moment in my life, I think, to come here” (S3610, 2:40). Other respondents identified the change that Antarctica had caused in their personal behaviours relating to environmental concern and personal safety (S0310, S0910). Finally, for one respondent, Antarctica provided an environment for him to reconnect with the natural world and examine the things he took for granted back in the ‘real world’. Coming to Antarctica allows him to remember that “we are absolutely connected in our lives to the natural world” (S3110, 9:07). Back home, one participant now describes Antarctica as

“basically my memories, my memories of the place” (NZA0211, 1:11). The continent has changed him, just as he has changed the Antarctica of his imagination.

#### 5.2.1.10 → Community

Another new theme that emerged from the interviews was that of community. Just over half of the direct experience participants discussed how the other people and the relationships between them were a major factor in their perception of Antarctica. The connections between people both in Antarctica and outside Antarctica shaped how an individual viewed and related to the continent. Belonging was an idea many participants discussed in their perception of Antarctica. One participant discussed the multiple aspects of belonging,

*The people that you meet and go down here with and have, you know, because when you're in this environment it's like this closed capsule, it accelerates relationships and both personal, as well as scientific. And so you get exposed to all sorts of stuff, and you know then you have these special relationships with this network of people that you've been to Antarctica with. Basically, sort of, it's like being in a club in some sense. Not that many people get the chance to do that kind of thing. And certainly it induces scientific collaborations very naturally.*

- 3:36, S4910

Touching on ideas of belonging to a small club, or elite group, of people was a common theme. For some participants, it was the “opportunity to meet people who you’d never get to meet in normal life, both distinguished visitors and scientists and the like. And get to discuss things and rub shoulders with people you’d never, ever get to meet normally” (S1010, 3:48; also S3610, S4110, S4910) which was so exciting. For others, it also included the participation in community building, “as far as you’ve got your work and there’s all the social community stuff, running the ski field, running the fam trips, helping out in the kitchen and all those little things that make an entire community. And it’s really cool” (SS0210, 3:29). But this sense of community can also extend outside of Antarctica, as one participant includes both his professional community and the even wider global community;

*And it also, certainly in the last several years, I have felt the obligation to, I create DVDs to show to, I've shown them now in the [government offices] and to school children, to thousands and thousands of people [around the world]. Because there's this whole mathematics community getting sucked into climate change problems because of it. Because I started doing this kind of stuff.*

- S4910, 4:14

Another participant puts it succinctly, saying “we’re a very elite group of people. And so we have great responsibility in communicating well what it is we’re finding out here” (S1910, 9:18). This idea of place as process is highlighted by one participant when she described how “human activity in Antarctica mostly depends on moving food and fuel around. [...] And then there’s construction materials and stuff like that, so there’s this, like, [...] this giant web of connections and you think you work in one place, but no, you’re still connected to all these people” (SS0410, 13:49).

#### 5.2.1.11 → Home

The final theme to emerge was that of home. While only three participants identified this theme, it was an important part of their perception of the place. Similar to what Suedfeld and Steel(2000) found in their research on capsule habitats, this theme shows evidence of some “strikingly positive” (p.230) experiences. They suggest that “people who come through a demanding capsule mission are mentally and physically healthier, more successful, and more insightful than they had been” (p.230). The three participants who identified this theme appear, if not more insightful, then at least highly aware of their own identity in relation to their environment.

The first participant was a scientist with multiple and lengthy previous experiences in Antarctica and the remaining two were working as base staff (one with many years’ experience as well). For the visiting researcher, the idea of Scott Base as home arose from both his accumulated experiences, as well as the feeling of ‘fit’ he feels whilst doing his job. Antarctica is a place where his “life skills come together. It’s a place where I get to use all my skills, [and] there’s a certain sort of completeness about being here” (1:52, S1210). For the participant with multiple experiences working as base staff,



Antarctica was home due to her having “more friends in McMurdo than I do in [NZ town]. So it’s sort of, you know, home in that sense, because it’s got lots of familiar people. And, yeah, it’s a place I really love” (4:00, SS0410). There is a sense of long-term commitment in this, which the participant goes on to struggle with in her acknowledgment that she will not always be able to come down. Realizing this, she actively works at creating a feeling of home back in New Zealand. The final participant, working as staff with only limited previous experience, was a very active participant in the social life of the base and saw “Scott Base [as] home, [...] perceiving it as my family and my house and my community” (1:38, SS0210). This perception of home appears to arise from the actions and involvement important to the individual in defining ‘home’. Part of it also arises from the participant’s lack of definite home back in New Zealand. This theme relates back to the idea of identity, and as Hay discusses in his theory on sense of place, “[t]he development of a sense of place is particularly influenced by residential status. Those with more superficial connections to place, such as transients or tourists, do not develop the strong attachment that is often found among insiders” (1998, p.5).

### **5.2.2 Summary of Findings**

The direct experience group elicited some of the same themes as previous groups, but there were also some changes and some additions to that list. The themes which remained the same included Wilderness (n=39), Physical Characteristics (n=37), History (n=18), Global Connections (n=10), Future (n=6), and New Zealand (n=5). The themes which were altered from previous lists include the Current Use theme becoming the Science/Work Place theme (n=30) and the Danger theme becoming the Challenge theme (n=29). The new themes included the Community theme (n=23), the Motive Force theme (n=17), and the Home theme (n=3). While first encounters were not discussed, changes to perception were, both from first encounters and multiple encounters. Only 7 participants felt their sense of Antarctica had stayed the same, the remaining participants spoke of changes in perception of comfort, social organization, the physical environment, and Antarctica becoming a place of work.

### 5.3 Linkages between themes: Indirect and direct experience groups

In both sets of interviews, complexity appeared to have a positive correlation with length and depth of personal exposure to Antarctica. In the case of those with no direct experience in Antarctica, the highest score of four was associated with the participant with the recent return of a close family member from the continent. The three participants who scored three also had personal connections to Antarctica, either via a family member or close friend. For those with direct personal experience in Antarctica, a positive trend was observed in the relationship between the number of visits a participant had had and the complexity with which they viewed the continent (Figure 5.3). This would suggest that experience and exposure play a role in shaping an individual's sense of place, which is in conjunction with Tuan's assertion that sense of place is created from prolonged experience within that place, connecting in with self-identity (Tuan, 1977).

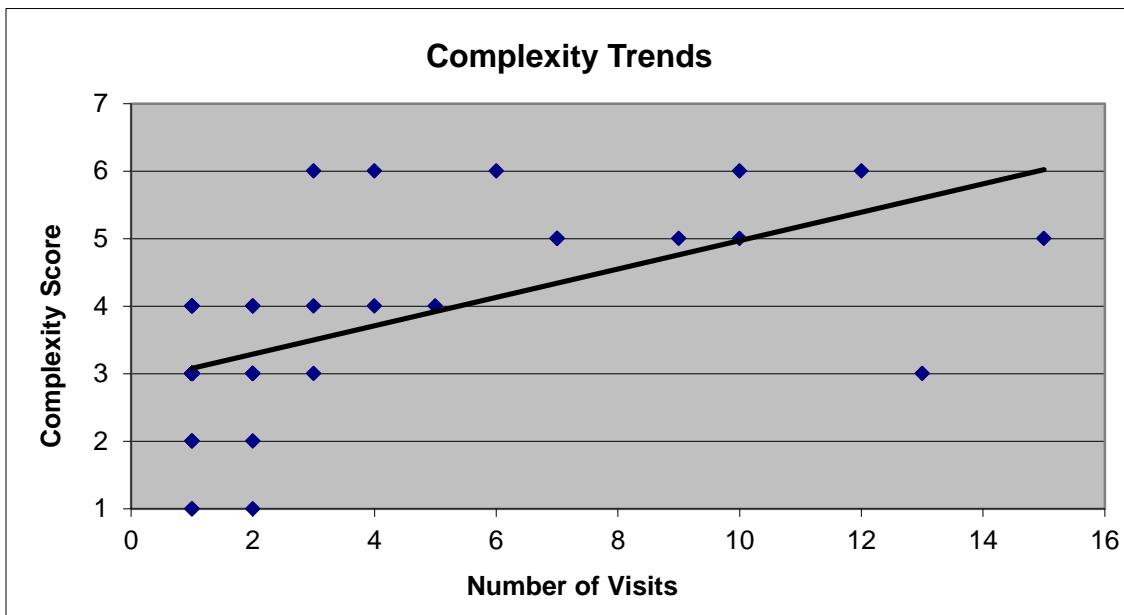


Figure 5.3 Observed correlation between number of visits and complexity of perception for participants with Antarctic experience.

The trend line in Figure 5.3 shows a strong positive relationship, with a Pearson bivariate correlation ( $r(42)=.57$ ,  $p<.05$ ). The variation suggests that duration of experience and depth of exposure to the Antarctic environment are not the only influences on sense of place development. No significant relationship was found between complexity scores and either age, sex, or education ( $r_{\text{age, cxy}}(42)=.26$   $p=\text{n.s.}$ ,  $r_{\text{sex, cxy}}(42)=$

-17  $p=n.s.$ ,  $r_{education, cxy}(42)=.25$ ,  $p=n.s.$ ). The qualitative examination of the links made by individuals between themes is somewhat more difficult to do with interview data, because “[w]ritten accounts tend to have higher scores than oral material” as they are often generated with more time and thought (Suedfeld, Tetlock, and Streufert, 1992, p.398).

### 5.3.1 Indirect Experience Interviews

The network created for the indirect experience participants was limited as there were only ten participants from whom to draw the links. While many participants expressed multiple themes, these were not always connected in the discussions and could not be linked in analysis. This resulted in a sparse network with few links (Figure 5.4). The strongest link, consisting of four connections, was drawn between the physical characteristics theme and the Wilderness theme. The next strongest link, with three connections, was between the Wilderness and History themes. Two connections were drawn between five different themes, including the Danger and Physical Characteristics themes, the Wilderness and Current Use themes, and the Current Use and Future themes. The remaining links were only noted by one respondent. The numerous weak connections show a wide variety of constructed images of Antarctica across the ten respondents.

The very strong connection between the Physical Characteristics and Wilderness themes highlights the important link between the two themes, as highlighted by half of respondents ( $n=5$ ). Listening to the respondents who make this connection explicitly shows that it is generally the physical characteristics of Antarctica that influence the perception of wilderness there. When asked to elaborate on her perception of Antarctica as beautiful, one respondent replied “the quietness” (NZA1011, 1:33). Another respondent was drawn to the sense of adventure the landscape offered through the presence of topography;

*I always had a fascination for standing on top of a hill somewhere, looking down a great big valley. To actually to know that it's [Antarctica] something that's worth looking around, rather than just, ah yup, more snow, more ice. You know, okay, what's down this valley? Ah, might be some animals down here. Anywhere else in the world there'd be four-legged*

*game animals. Whether or not there is down there I don't know, but it's probably something to have a look at again too.*

- 19:23, NZA0911

And there was more than one respondent who made direct association between the white colour of the snow and ideas of unspoilt, pure wilderness (NZA0111, NZA1011). These all suggest a uni-directional relationship between the two themes.

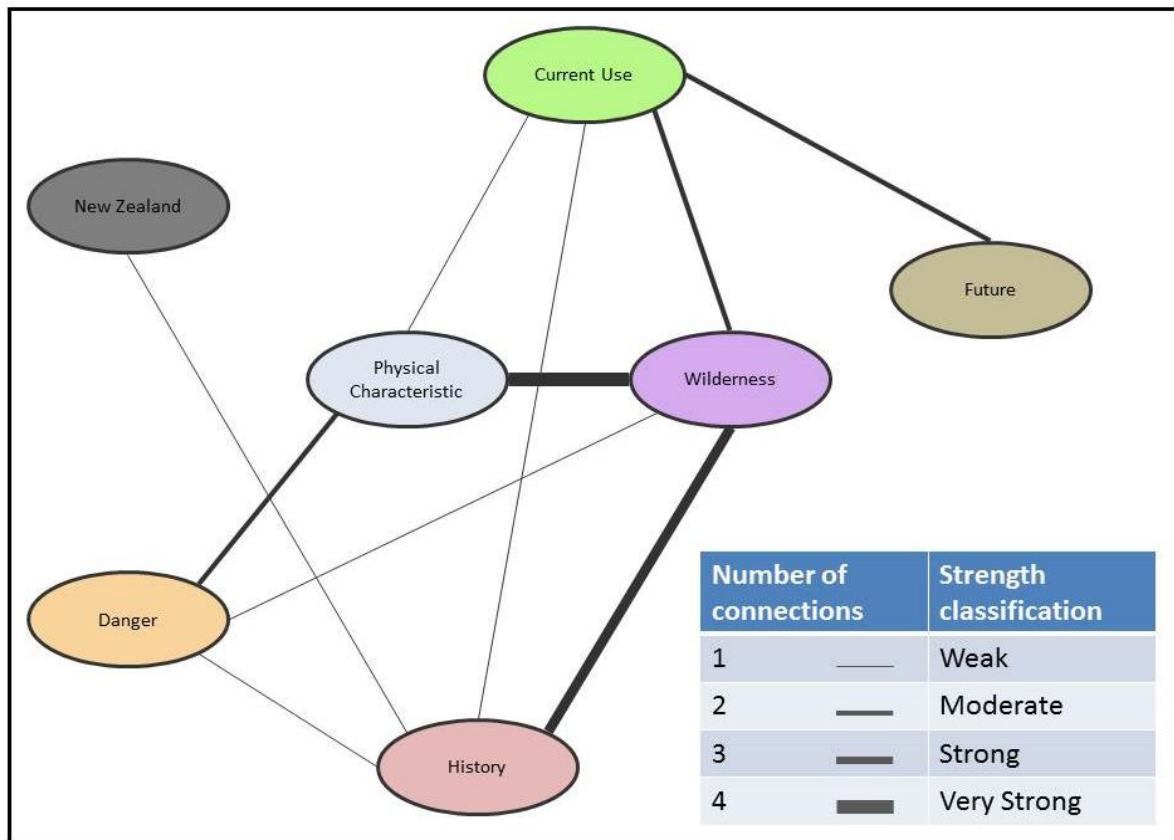


Figure 5.4 Theme co-occurrence seen in the interview responses of indirect experience New Zealanders. Line thickness relates to strength of co-occurrences as determined by occurrence across all interviews.

The strong link between the Wilderness and History themes was identified by one third of respondents (n=3). The connection was outlined in all three cases as coming from reading historic narratives following the explorers of the heroic era. The romanticism and adventure of exploration were highlighted by two of the respondents (NZA0911, NZA0711), one of whom remembers,

*reading of Shackleton's stories. And just thinking how amazing that must be. And not really thinking about the reality of what it must have been like at all. Just seeing the romantic side of, you know, kind of having to, you*

*know, create bits out of your ship. And just not being able to comprehend why you would start eating the dogs and killing them.*

- NZA0711, 7:10

The aloneness and solitude expressed by individual explorers in their diaries was also acknowledged by one respondent (NZA0111). All of these shaped the overall image of Antarctica as a place of wilderness set to challenge the human spirit of adventure and discovery.

The Current Use theme has two moderate connections with both the Wilderness and the Future themes. The connection between Wilderness and Current Use demonstrates an awareness of how Antarctica is currently used for both tourism (NZA0311) and science (NZ1011). While the connection between Current Use and the Future relates to respondents perception of the Antarctic continent as being an important part of dealing with the issue of climate change (NZA0611, NZA1011).

Another moderate connection can be found between the Danger and the Physical Characteristics themes. For one respondent, this is due to the dangerous weather conditions he had heard and read about through his research (NZA0911). For the other respondent, the Danger theme is transformed into challenge and the link is made relating to the achievement one can feel in overcoming the extreme environment (NZA0711).

### **5.3.2 Direct Experience Interviews**

The network map for the direct experience interviews shows a much greater level of both differentiation and integration (Figure 5.5). The strength classification of connections was based on the levels used with the indirect experience New Zealander network map, with the very strong classification at >40%, the strong classification at >30%, the moderate classification at >11%, and the weak classification at >1%.

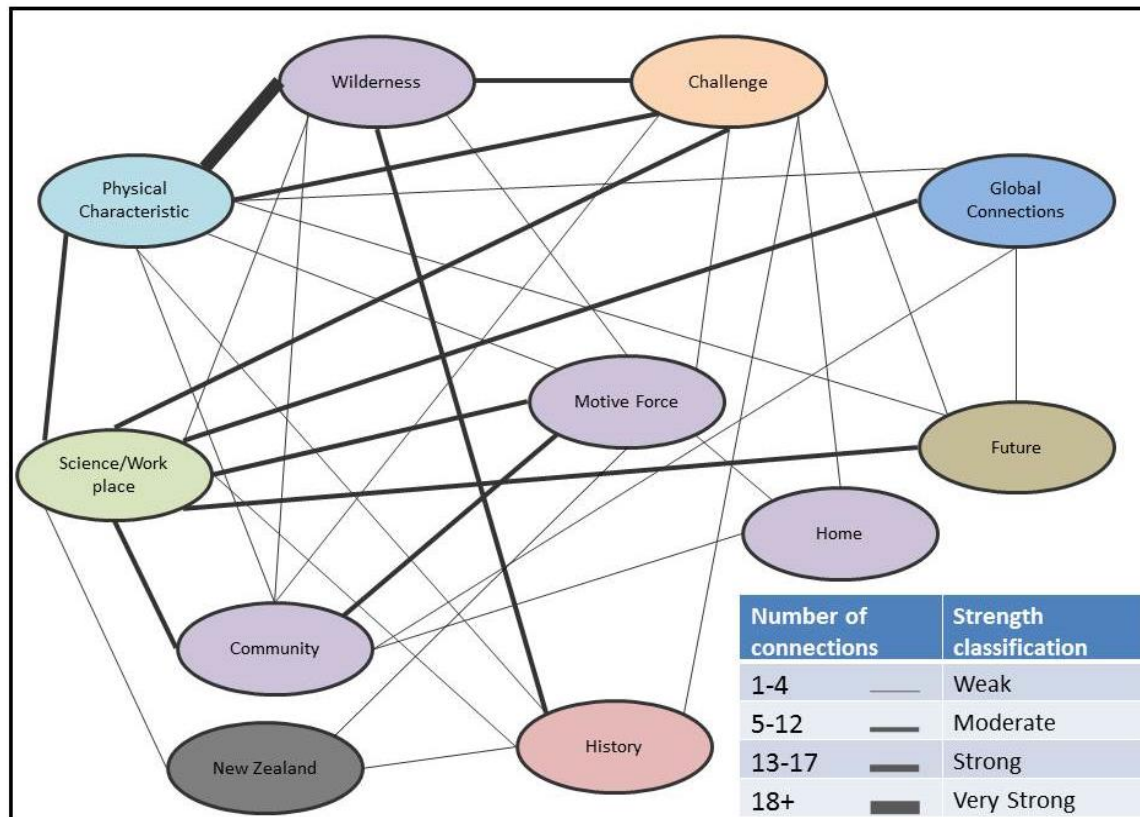


Figure 5.5 Theme co-occurrence seen in direct experience interview responses. Line thickness relates to strength of co-occurrences as determined by occurrence across all questionnaires.

The only very strong connection lies between the Physical Characteristic and Wilderness themes. Connections made by respondents focused on the wilderness the physical environment demonstrates in a multitude of ways. This was most commonly observed in the description of what constituted wilderness in the respondents encounter with the Antarctic landscape. One of the most commonly reported links relates the size and scale of the landscape to feelings of humbleness and smallness, one of the many aspects considered important to wilderness both by academics (Nash, 1982) and wilderness users (S3110, S0610, S2110, S1110, S1910, S3210, S3410, S3910). Another link between the two themes comes from the visual perception of the Antarctic landscape as beautiful. From the stunning mountains (S4110, S0510) to the ever-changing seasons (S1010, S0710, SS0310) to the vast tracts of ice (S1910, S3210, S1110), the visual stimuli encountered by respondents help to shape their perception of Antarctica as a wild place. Many of the responses are reflected in one participant's words when describing an important memory;

*I think the thing that sticks in my mind is usually when I'm on my own and it's perhaps at the end of the day and the sun's sitting over the hills, you know, and just there's a tremendous sense of isolation and just a big landscape with no sign of humanity, there's just this sort of vastness. And it is, to me, incredibly beautiful, but you also have to remember that it can kill you quite easily. You know, you're quite glad you've got a warm tent in the background there. But that's what I remember when I leave, is the landscape.*

- 5:28, S1110

While there were no strong connections between any of the themes, there are a number of moderate connections. As mentioned earlier, the majority of these are with the Science/Workplace theme (5 of 9). This focus suggests that respondents feel the research that goes on in Antarctica is a major part of their perception of the place. Linkages with the Physical Characteristics theme revolve around the fact that it is these characteristics and features being studied (S4710, S4510, S2010, S5010, S4910). Some participants also suggest the influence can go the other direction when changes in weather shape how and when research can be done (S3910, S1210). The moderate connection with the Challenge theme is based on the challenges some respondents discussed in doing their research or work in the Antarctic environment, whether these related to the environment (S3910, S1210), the people (S1610), or simply the subject matter (SS0310). The link with the Global Connections theme arises from respondents feeling that the research and work being done in Antarctica has an impact at a global level, or as one respondent succinctly put it, "it's this important cold, remote place that needs to be understood so that we can understand what's happening to the globe" (S4510, 1:13). The relationship between the Science/Workplace and the Future themes follows a similar line, in that Antarctic research will help find solutions for ongoing and future problems such as climate change and sea level rise (S5010, S3110, S0210). Another important connection made between these themes refers to the training of future researchers to continue the work being done in Antarctica (S2110, S4810, S4910). Finally, the link with the Community theme arises from collaboration, both international and more local, which many respondents took part in (S4910, S3110) and admired (S4710, S4510, S3810).

Other moderate connections were made elsewhere. The connection between the Challenge and Wilderness themes comes from the perceived danger arising from living and working in a wilderness situation. The challenges respondents referred to were based on ideas of remoteness and isolation (S4510, S3910, S1110), and feelings of insignificance in a vast, wild landscape (S1910, S2110, S3910). The connection between the Challenge and Physical Characteristics theme follows a similar line, with respondents touching on the challenges that the weather (SS0410, S3910, S3710, S1310, S0610) can proffer. The connection between the History and Wilderness themes is based on the romance and mystery the explorers imparted on many respondents' idea of Antarctica (S4510, S3110, S2010). The connection between the History and Personal Connections themes comes from the personal stories of encountering and experiencing the historic huts and stepping back in time (S0510, S1010). The Science/Workplace link with the Motive Force theme shows the strongest connection, as respondents focused on what they did in Antarctica and how that influenced how they viewed themselves. One respondent felt that Antarctica allowed him to do work in an environment that brought all of his life skills together, making him feel "a certain completeness about being" in Antarctica (2:06, S1210). Self-identity is a large part of this link, with respondents integrating their perceptions of themselves as researchers, scientists, and students into their understanding of Antarctica as an office, a workplace, or a science laboratory. Finally, the connection between the Motive Force theme and the Community theme highlights the role other people play in shaping personal understanding and connection with Antarctica. For some, it is the sense of belonging, to an exclusive group (S1910, SS0210), a team (S0810, S2110, S3110, S3610), and even a family (S4710, SS0210, SS0410), which influences how participants perceive themselves within Antarctica. For one respondent, her perception of Antarctica had more to do with the people she spent time with there than the physical environment itself. "Every season there's different people, [a] different peer group and each of them give you different memories. [...] I mean, let's face it, the landscape in Antarctic is always the same, but how do you remember that landscape? It's dependent on what events happened to you" (S4410, 4:55).

The large number of weak connections shows the variety of ways individuals have of building their understanding of Antarctica. The importance of the Wilderness and



Physical Characteristics themes are evinced by the high number of citations, but the Science/Workplace theme is also shown as important through its' high number of moderate connections with a variety of other themes.

Not all themes were well connected. Of specific note are the New Zealand and Home themes, which only have weak connections linking them to other themes. Due to the low number of respondents who cited either of these themes, there was limited opportunity for them to link with any other themes.

### **5.3.3 Summary of Findings**

Participants with no direct experience in Antarctica were found to have a moderately complex view of Antarctica, with the highest score being a 4. Connections between themes showed some similarity to those found in the questionnaires, with the strongest connection between the Wilderness and Physical Characteristics theme. And the most connected themes included the Wilderness, History, and Current Use themes.

Complexity scores for the direct experience group tended to be somewhat higher than for those with no experience, and showed a positive correlation with number and length of visits (overall experience). The complexity map showed far more connections in this group, again with the strongest connection between the Wilderness and Physical Characteristics themes. The themes with the highest number of connections included the Wilderness theme, the Physical Characteristics theme, and the Science/Work Place theme.

## **6.0 Discussion**

This thesis examines the role personal experience plays in the development of sense of place in Antarctica. In part, it also addresses the fundamental question of whether the physical world, which we experience first-hand, is different from the imaginary, narrative-based world in our minds. By exploring how people with different relationships to Antarctica have conceptualized and understood it, I hope to understand the driving question as to how sense of place develops in extreme and unusual environments.

The research question bridges the gap between postpositivism and interpretivism, giving each the chance to present how people view and connect with the world around them. By stepping outside the parameters set by each paradigm, the data from each participant can be examined without preference. Where the data from participants with personal experience tended towards a more postpositivist perception of Antarctica, as a place of experience and physical encounter, there were a few participants who reflected back on the more personal and social aspects of their perception. The Antarctic perceptions of the participants with no personal experience in Antarctica were created purely through imagination, interpretation and socially constructed images. While many of the participants were aware of their lack of direct experience, in many cases they still had a vivid and complex sense of Antarctica. Despite these differences in sources of experience and information, many of the themes identified in each group showed much similarity. This suggests that, while direct experience plays an important role in creating sense of place, it is not the only factor. Conversely, the data from the questionnaires and interviews suggests an equally important role for the more interpretive qualities of the imagination in weaving together the story of place and self, be it through experience or interest.

This chapter will pull together the evidence collected from both the interviews and questionnaires, and discuss how New Zealanders come to know Antarctica. Beginning with an outline of the contribution towards the theoretical realm, we will examine what the findings can tell us about sense of place development. We will end by examining the contribution this research can make to the practical realm of decision-

making in Antarctica, with regards to tourism management, policy development, and communication.

## 6.1 Theoretical development

*Place is latitudinal and longitudinal within the map of a person's life. It is temporal and spatial, personal and political. A layered location replete with human histories and memories, place has width as well as depth. It is about connections, what surrounds it, what formed it, what happened there, what will happen there.*

- Lippard, 1997, p.7

In this quote, Lippard attempts to describe the various factors that go into making place. Coming from a strongly phenomenological perspective, Lippard believes in the “intricacies of human experience and ‘being-in-the-world’ in an attempt to get behind the abstract theorization and uncover the ‘true essence’ of people’s encounters with phenomena” (Holloway and Hubbard, 2001, p.71). While this is a popular approach across place literature, it is not the only approach. The positivist approach focuses much more on the measurable aspects of place perception, relying on, as Ryan and Cave (2005) put it, the various “components of images” (p.149) people hold of places. The different components are brought together to create theoretical models and find fundamental ‘truths’ as to how place is perceived. While these two approaches may appear to be mutually exclusive, taking both into consideration throughout the study allows the data to lead the emergence of new findings and any potential theoretical development.

The discussion of this theoretical emergence will follow a similar path to the researcher’s own developing understanding of the subject area, beginning with an examination of the variety of ways respondents have encountered Antarctica. This will establish the spectrum of experiences covered throughout the study and set a foundation on which to base the findings. The focus will then shift to looking at how individuals bring these various experiences together to create a unique sense of place: first, by identifying connections in and with place; second, by establishing a narrative, and third, by integrating all of this into their existing sense of self. Finally, the findings will be

examined for an emerging theoretical model showing how sense of place is developed in extreme and unusual environments.

#### **6.1.1 Encountering the environment– Sensory and mental stimulation**

How we encounter a place plays a vital role in shaping the information we are able to receive, be it second-hand (imagination-based) or first-hand (sensation-based). Understanding how people gain their knowledge about place allows us to gain insight into the forces shaping both individual and group senses of place. The continuing process of place-making means that multiple encounters of different types will add new layers of information to evolving senses of place. New Zealand offers many different ways of encountering Antarctica indirectly. But for those who have the opportunity to encounter Antarctica first-hand, the experience provides them with another level of information on which to build their sense of place.

Everyone first encounters Antarctica from a distance, building their sense of the place from second-hand information gathered from a variety of sources. These sources are often chosen based on personal interest. Participants with no direct experience mentioned a range of interests that guided their own personal research into Antarctica, from the wildlife to the history, from the unique physical environment to the science used to study it. While it was more difficult for those with direct experience to recall their initial encounters with Antarctica, some were able to describe how their love of mountains and skiing or history and adventure had led to pursuing a path that might eventually get them to Antarctica. Reminiscent of Shamai's (1991) belief that "the person gives the place meaning", this suggests that personal interests guide the kinds of information we seek out and lead us to learn about certain aspects of the environment in question.

Another consideration in the assessment of second-hand information is our pre-existing personal experience and knowledge; experience and knowledge not necessarily limited to the environment, but to the activities, objects, and people we might associate with that environment. One questionnaire respondent wrote about their experiences in skiing and how this made Antarctica an interesting place for adventure (Q016-ANZ). Another respondent, whose husband had been down to Antarctica several times, referred

to the air travel required to cross such a large landmass (Q006-ANZ). One New Zealand interview respondent, who worked as a high-country shepherd earlier in his life, focused on learning about the physical environment and the similarities and differences to the mountains and valleys of his youth (NZA0911). Another respondent, an outdoor education provider, concentrated her research on adventurers, both historic and contemporary, who had encountered Antarctica in unique and challenging ways (NZA0711). Those with experience in Antarctica struggled with examining this retrospectively, as “what you think of Antarctica, what it is before you come here and once you’ve been here, it’s almost erased, because of your experiences here” (3:17, S1910). This suggests that our experiences and knowledge gain are cumulative and are constantly building and shaping our sense of who we are as individuals. This in turn shapes the way in which we examine the world around us, as “expectancy explains many of the varied reactions different people have from the same stimulus” (Gunn, 1972, p.114). While the experience and knowledge of these respondents is what brought them to Antarctica, their exposure to the environment is less constrained by the confines of what is presented to them in individual books, films, or lectures.

A third consideration when examining second-hand information is the social or cultural framework within which we all find ourselves. There are two aspects to this filter. First, respondents with no personal experience in Antarctica receive all their information from groups and individuals who have previously filtered their information depending on their own values and beliefs, and the stories they are trying to tell. Both the questionnaire respondents and the interviewees with no personal experience discussed the various sources of information they had. One interview respondent (NZA1011) talked about how the stories she heard from friends gave her a greater sense of Antarctica as she felt they had no hidden agenda in their stories and she was able to ask questions of them. Because the recipient and source are in the same social group, the symbols and beliefs used to filter information are more likely to be shared, thus communicating a more understandable landscape (Greider and Garkovich, 1994). The second level to this filter relates to the social and cultural frameworks within which each individual places themselves. The broadest social group identified in many respondents’ answers was that of New Zealander, connecting with symbols such as Sir Ed Hillary and the Erebus

disaster. These sorts of symbols help people connect with the identity of larger and more remote places by evoking a certain identity based on the social and cultural values of the time (Tuan, 1975). Smaller groups identified included that of being a Christchurch resident, which some respondents felt gave them a greater sense of connection to Antarctica, as both the New Zealand and American programs are conducted out of that city. Another two respondents, one questionnaire and one New Zealand interview, identified their roles as teachers as providing them with unique opportunities to learn about and connect with Antarctica through their job. So, “while an individual might develop a personal sense of place around a specific site, the ‘social place’ known and understood across sets of people is created and reproduced through interpersonal interaction, formalised in social behaviours, and ultimately persists in collective memory” (Stowkowski, 2002, p.372).

For respondents with no direct experience in Antarctica, encountering the environment is a highly moderated experience. While they have the freedom to choose the sources of their information, particularly those that relate to their specific areas of interest, these sources have been created by other individuals who have applied their own filters and values. Their re-presentation of the Antarctic “is not a mirror of the world” (Webb, 2009, p.36), instead “it tells us what is [...] and it] makes and shapes our understanding of reality” (p.26). Using language and the signs and symbols within our culture, individuals are able to pass on their understanding of the Antarctic to those who cannot experience it directly themselves. This is especially evident in the New Zealand Antarctic stories of Sir Edmund Hillary, and the Erebus disaster. These act, as Tuan (1991) suggests, as “foundational stories that provide support and glimmers of understanding for the basic institutions of society; at the same time, [...] by weaving in observable features in the landscape (a tree here, a rock there), strengthen a people’s bond to place” (p.686). These nationally important stories provide individuals with shared memories of a place they have never been, and give ownership over a landscape they have not encountered.

For those who have traveled to Antarctica, first-hand knowledge, or experience, plays an additional role in shaping place perception. This knowledge is gained through sensual perception, as can be seen in the various ways respondents described their environments using personal narratives focused on sensation. The combination of sensual

description and narrative highlights the importance of story-telling in both understanding and communicating one's perceptions of place. But it also relates to individual identity, "as it is only in, and through our grasp of the places in which we are situated that we can encounter objects, other persons or, indeed, ourselves" (Malpas, 1999, p.177). Within this group of participants, there were numerous ways people were experiencing the continent and some felt this also played a role in their perception of the place. Many of the interviewees were researchers, some in field camps and some at Scott Base. This difference in living arrangements provided participants with different opportunities and experiences, thereby shaping what they experienced. The other group of interviewees included base staff. These participants felt that the extended period of time they spent down in Antarctica gave them a unique perspective and contributed to their sense of place. This is supported by Relph's (1976) work on place and placelessness, which defines place as a phenomenon of the geography of the lived-world of our everyday experiences. Our individual conceptions of place are composed of our purpose within that place, our attitudes, the concentration of our intentions, and the experience we have while there. For Relph, "the essence of place lies in the largely unselfconscious intentionality that defines places as profound centres of human existence" (p.43). It is the everyday interactions with the environment that lead to the unique and individual perceptions reported by interviewees.

Direct experience in any environment is made up of both active and passive information gathering. From the sensual information coming in through our bodies, to the manner in which we move through and engage with the environment and people within it, our immersion within a space plays an important role in the information we perceive, and the information we remember. This information is also filtered through our own internal set of lenses based around our values, beliefs, and knowledge, resulting in an ongoing and ever-changing sense of place. For many, Antarctica is not a place one can easily describe. It is a place one must experience to understand and, even then, the encounter itself appears to simply add layers onto an increasingly complex notion of the Antarctic and make comprehending and defining it even harder. A blank white void fills with colour and texture through encounter, but also becomes more unknown.

Encountering Antarctica can occur in many different ways; from the very brief encounter through a news story on TV, through the more involved encounter at an exhibit in a museum, all the way to travelling there oneself. Each encounter will add new information to the existing perceptions held by the individual. And while physical, direct encounters with an environment provide people with a distinct type of information, indirect encounters, mediated by others, offer another type of information.

Sense of place is a unique and personal thing. Over the 54 interviews conducted with individuals about their perception and sense of Antarctica, many different ideas have been raised. What has become quite obvious is that an Antarctic sense of place depends very much on how individuals bring together all the information they receive. The themes identified by the respondents demonstrate the variety of aspects important to shaping an Antarctic sense of place. And while there were many differences amongst the various themes identified by participants, there were also commonalities and links between them. These differences and links all come together to create the individual senses of place investigated in this study. These are explored in the next three sections examining connections, narrative, and identity.

#### **6.1.2 Drawing connections – Bringing the information together**

Personal connection is one of the fundamental aspects of many theories on sense of place. Seamon (place ballet; 1979), Thrift (non-representational theory; 1996), Relph (place as phenomenon; 1976), Stowkowski (social construct; 2002), Heidegger (being-in-the-world; 1927) and many others endorse a phenomenological approach where active involvement with place is necessary for the creation of sense of place. Many of the respondents used personal connection to explore the various themes important to them, demonstrating the value the respondents place on their own personal experiences, either direct or indirect, in shaping their perception and ultimately their senses of Antarctica. This can be broken down into three basic phenomena: behaviour-in-place, sensual encounter, and social interaction.

Behaviour-in-place focuses on the interaction between self and environment. Genereux, Ward, and Russell (1983) identify four ways in which place can be construed



through behaviour; “reasons-for-going, suitability for intended behavior, expectation of behavior, and activities-while-there” (p.45). Many respondents used personal anecdotes about activities-while-there to highlight a challenge they had faced and how it had contributed to both their sense of self and their sense of Antarctica. These varied from the expected scientific research, skiing, and hiking, to the unexpected realities of camp life. This supports the works of: Seamon (1979), who discussed the idea of place ballets, where the distinct movements of individuals in place generated specific senses of place; and Casey (1993), who examined the idea of being-in-place, and focused on the operative intentionality of corporeal subjects within and between places. In each of these, the authors maintained the importance of movement and action-in-place in determining the sense of place that would be created. Similarly, the respondents with direct experience showed that their behaviours, both the expected and unexpected, provided them with specific ways of encountering the Antarctic environment and shaping their perception of it.

Sensual interaction is the other way in which many of the respondents with direct experience in Antarctica expressed both their encounter with and their perception of place. For some, the sensual perception of the environmental is the very basic way to gain “immediately relevant information” (Nohl, 2000, p.228). However, as Rodaway discusses (1994), sensual perception is also “a relationship to the world and a decision-making process with respect to that world” (p.11). In the Wilderness theme, many respondents discussed how their experiences resulted from, and led to, perceptions of wilderness in Antarctica. Participants used stories of their interactions with the wildlife, the landscape, and the climate to describe their sense of Antarctica. One respondent summarises her sensual encounter with Antarctica;

*The cold surprised me. I mean, that sounds stupid, but it was not the kind of cold I was expecting. I mean we stepped out and it was like a sting of cold, and the cold is not miserable down here, the cold is really, really sharp and when it starts to get you, it gets you. [...] The sharpness of it combined with the light. And perhaps also the lack of smell of something, you just, you really feel like you've walked into something completely crisp and new.*

- S1110, 7:48

“Perception is an experience of the whole body” (Rodaway, 1994, p.20) and the multi-sensorial encounter with an environment is part of what shapes our sense of that place.

A final aspect of the direct encounter comes from the social interaction that occurs while in an environment. This is different from the social or cultural framework mentioned previously, as it focuses instead on the active engagement with other individuals within an environment, or, as Stowkowski (2002) puts it “people actively *create* meaningful places through conversation and interaction with others” (p.372). Although these interactions may be shaped by cultural and social norms, it is the flowing nature of relationships and co-constructed realities that are important here. Over half of respondents with experience in Antarctica mentioned the importance of the community in Antarctica as part of their sense of place. One respondent expressed this well when she described her Antarctica;

*The reason the Antarctic to me comes in the form of, every few seasons, with different people, and because it's people, that interaction with the Antarctic environment and how, that so called dynamics of interpersonal relationships, I think, that shapes how you feel about Antarctic[a], I think. So every season, there's a different people, different field group and each of them give you different memories. I mean, let's face it, the landscape in Antarctic is always the same, but how do you remember that landscape? It's more dependent on what has happened to you.*

- S4410, 4:39

For many respondents, it is these interpersonal relationships, at both the personal and professional level, which contribute to their perception of Antarctica. Fitting into a community is an important part of our identity and the remote nature of the Antarctic provides a unique and strongly defined group to which one can belong.

The importance of personal connection can also be seen in several of the themes identified by respondents from all groups. Different types of connections can be observed in the New Zealand theme, the global connections theme, and the physical characteristics theme. Each of these is examined below along with illustrative quotes.

Personal connection is evident in the New Zealand theme identified by respondents in all three groups. This theme emerged from the identification of both past

and present New Zealand connections with Antarctica. For respondents with no experience in Antarctica, national and local connections acted as links between the individual and the continent when no direct personal connections were felt. This suggests that Antarctica, and especially Ross Island and Scott Base, has been incorporated into many peoples' national identities as New Zealanders. The observation that very few respondents with experience in Antarctica cited the New Zealand theme suggests their own personal connections outweigh the need to mention any sort of national connections. Antarctic sense of place appears to transfer from a part of an individual's national sense of identity to a more personal sense of identity through the direct interaction with the continent.

Another aspect closely related to the future theme is the global connections theme. Climate change is a global phenomenon. Respondents with experience and those without experience noted this in their discussions of Antarctica. Other outward connections included the Antarctic Treaty system (by those with no direct experience), and the international research collaborations (by those with experience). All of these focus on Antarctica as it is connected to the rest of the world, locating it as a place of connections rather than simply a place of differentiation. This is explicitly stated by one respondent with many years experience in Antarctica, who saw Antarctica as a "giant web of connections" (15:32, SS0410). The increase in the global connections theme, from only 10% of questionnaire respondents and none of the interview respondents with no experience referring to it, to nearly one-quarter (23%) of direct experience respondents citing it, suggests that, for those with no experience, place is based far more on differentiating it from elsewhere. For those with experience, place can become more about the connections and interactions which make it unique. This suggests that how we perceive a place as it relates to both ourselves and the world at large is greatly influenced by our experience of that place. With experience in place allowing individuals to look beyond the often isolating characteristics specific to a place and outwards, towards the more unifying features unique to that place.

Another aspect touched on by the various themes was the role the physical environment plays in shaping sense of place. The prevalence of both the Physical Characteristics theme and the Wilderness theme in all three groups indicates that the

environment does play a role in shaping how individuals perceive and sense place. The transformation of the current use and danger themes goes on to suggest that the physical environment is even more important in shaping sense of place for those individuals with no direct experience with a place. While the environment may be mediated through second-hand sources of information, the unique attributes are highlighted and used to create an identifiable and unique image of that place. It is through this mediation that social and cultural filters may be applied adding a further layer to one's developing sense of place in the imagination. Direct experience of a place, then, transforms this imagined landscape into encountered space, changing how one imagines and relates to that environment. This is well illustrated in one respondent's words,

*Antarctica seems like a challenging place to go, and kind of a remote and a romantic, in a way, place to go because it's so isolating. [...] It captures the imagination because so few people have seen it. So I think most people imagine Antarctica, they don't see it, they can't. And I think, I mean, we all can imagine ice bergs, you know, if we go to Newfoundland, but we can't all imagine the vast empty Antarctic plain. You know? The polar region and kind of the vastness of it. I think. I think it's a little bit like being at sea on a boat for the very first time and I'm looking 13 kilometres in all directions and realizing just how big the ocean is. I think, in the same way, it's kind of romantic, but it's hard to imagine it once you've done it.*

- 2:45, S4510

For this individual, imagining the environment is changed by her experiencing it first-hand. This suggests that, while the physical environment is important for both those with experience and those without, it is incorporated into a sense of place in very different ways.

### **6.1.3 Narrating place – The role of story**

From personal connections arise personal narratives, used by participants to explain their perception of Antarctica. Narratives were observed across all interview groups in close association with the senses and the imagination.

Personal sensual information, such as sound or smell or touch, was used by participants with direct experience to place themselves within the environment in order to explain how they perceive it in their mind. This is similar to Entrikin's theory of 'emplotement', as described in Chapter Two. This story-telling of place allows participants to not only describe the place they encountered, but to situate themselves within that place as it is the only way they know it. For those participants with only indirect, or second-hand, experience of Antarctica, information comes from sources whose main focus is telling a story. While the story's focus may not always be on Antarctica, the place emerges through both stated and implied characteristics important to the teller. Place is "actively create[d] [...] through conversation and interaction with others" (Stowkowski, 202, p.372). This social construction of place is an ongoing process at both the individual level and the group level, with many of the interviewees discussing their sources of information in chronological order as part of their own developing story. Despite the sources of information being different, the idea of narrative and story runs throughout.

The sources of second-hand stories fit well within Gunn's stage theory of destination image as discussed by Prebensen (2007) in her article on destination image. The first two stages of her theory focus on the second-hand information people can receive prior to travel. *Organic image* refers to information gained from sources that are not attempting to sell or promote the destination. These can include books, class lessons, documentaries, and stories told by friends or family who have been to the destination. It is these sources that were most cited by participants from both the questionnaires and the interviews. Sources such as news stories discussing current events occurring in Antarctica, movies using Antarctica as a location, lectures or talks given by scientists or researchers, as well as family or friends who have travelled there, museum exhibitions, art shows, or Antarctic centre exhibits, school lessons, books, and even special memorial services. All of these sources share those pieces of information about Antarctica that are pertinent to their own story, be it to sell a product, follow a person, or convey a scientific finding, leading to a partial image of Antarctica. *Induced image* on the other hand, refers to information gained from sources attempting to specifically promote a destination for travel. Advertising selling travel to Antarctica focuses on sharing specific information

promoters feel potential visitors would like to hear. This leads to a destination image that is highly managed in how it is presented and to whom. While only one source of this type was cited by questionnaire respondents, a large majority of them selected it. Interview participants made no mention of any sources of this type in their discussions. The less organic stories produced at this stage use stereotypes, symbols, and narratives already identified and accepted by the socio-cultural group. This results in sources of 'information' that tell us nothing new, but instead reify that which is already known (Greider and Garkovich, 1994).

For direct experience participants, the act of situating one's self within a place was demonstrated explicitly and implicitly in how they communicated their experiences to the interviewers and how they described sharing their experiences with others back home. As mentioned in the physical characteristics theme, several participants used sensual descriptions when describing environmental factors such as the sound of snow, the feel of cold, dry skin, and the feeling of driving into a complete whiteout. These stories place the participant in the environment and use the resultant sensual information to help create meaning in the interaction. Many participants, who expressed difficulty in verbally sharing their experiences with those back home, shared photos taken during their stay. These photos were often focused on not only the natural landscape, but also their camps, the people they worked with, the equipment they used, and the events in which they took part. They used their images to tell the story of their trip for them, "freez[ing] and re-animat[ing] events" (Yusoff, 2007, p.218) for others to share in.

Story-telling allows people to position themselves in relation to a place. Pulling on known information and the imagination, it plays a vital role in understanding our environment, whether it is associated with direct experience of that environment or not. While mental filters aid in the interpretation and compilation of incoming information, it is the imagination that allows us to take that information beyond what is known into the realm of possibilities and potential, creating story. For the majority of New Zealanders, or, indeed, most of the world, imagination is the only tool that can transform the information from stories and images into a sense of what Antarctica means to them.

Imagination allows individuals and groups to look beyond what they know and attempt to predict outcomes that might result from certain events. For respondents with

no direct experience in a place, imagination is a way of connecting with that place and gaining a further understanding of both the place itself and their relationship to it (Tuan, 1991). One respondent talked about how the idea of mountains and valleys inspired images of his youth as a shepherd (NZA0911). These images of exploration and discovery brought Antarctica closer to his everyday life and inspired further interest in the continent. For another respondent, imagining Antarctica served as a way of escape from her daily life (NZA1011). Images of pure, untouched snow were placed in contrast to the dirty streets of her home, and ideas of peaceful calm and quiet were seen in opposition to the noise and stress of being a parent. One respondent focused on the potential Antarctica offered for solving future environmental problems associated with the changing climate (NZA0611). He imagined a future where Antarctica might offer a place to escape rising sea levels and changing weather patterns. Each of these respondents used their knowledge to imaginatively connect themselves to this distant environment.

Imagination is also used by those with direct experience in place, especially when first encountering a new environment. By applying the knowledge we have of a place, we can create an image of what we might expect through our encounter. Many respondents with direct experience discussed how their initial expectations of Antarctica had varied from their experiences thus far. For some, their expectations focused on the climatic conditions and were far more harsh and challenging than the reality encountered. These expectations are tools created by respondents using their imagination to help locate themselves within a new environment. They help by suggesting appropriate behaviour and approaches to otherwise new challenges. Other respondents found the narrow focus of their expectations on climate left them surprised with other differences, such as the social aspect, or lack of plant and animal life. In these cases, the limited expectations resulted in longer periods of adjustment and some discomfort at settling in. This is in agreement with Casey's (1976) suggestion that "we tend to imagine [unapprehended things] in accordance with what previous perceptions of the object in question indicate or suggest" (p.139). Our creative imaginations must work from the knowledge and experience we already hold (Ladd, 1897; Casey, 1976). It is simply rearranging this

information into new patterns in order to answer hypothetical questions about what our futures might hold.

Once people have had a direct experience with a place, their knowledge of that place is far more substantial and focused. This might suggest a reduction in the need for the imagination, although it appears to simply alter the questions asked. While direct encounters provide people with “real world” knowledge and experience, individuals still use their imaginations to fully process and comprehend not only their place within the environment, but the world at large. For some respondents, this was evident in their discussion of Antarctica as a place of science. The unique nature of the remote Antarctic environment allows scientists to conduct research and create models from the data they gather. By using the imagination, scientists are able to create hypotheses and draw connections between phenomena – using the knowledge they had obtained locally to answer questions about the world at large.

The imagination is something we all rely on. Whether we have direct experience with what we are imagining or not, it allows us to answer questions about ourselves, our world, and our place within that world. It is a constantly shifting process, taking in new information and adjusting the answers we come up with.

One question particularly pertinent to Antarctica is to what extent those with no on-site experience can care for a place. For questionnaire respondents, care was observed as concern for the future; either for future generations or the future of the environment, including plants, animals, and fish. As one respondent put it, “we learn that as Kiwis we have a given responsibility to lead other nations in caring for this place – for the sake of longevity and nature – and future of the planet/generations” (Q001-ANZ). This concern for Antarctica supports Silk’s (1998) assertion, that care for distant places can arise from a place being “tied into people’s own lifeworlds” (p.173) through personal interest and connections made by media stories, personal research, and other sources of information. Imagination is sparked and a deeper interest is created. These various connections make Antarctica a place respondents with no direct experience could care about.



#### 6.1.4 Sense of Identity – Sense of place

Once an individual places themselves within the story of a place, it becomes enmeshed with their sense of identity. This link between place and self is built around our interests, which are an important part of who we see ourselves as, and how we relate to our environment (Gustafson, 2001; Relph, 1976). Respondents to both the questionnaires and interviews identified numerous aspects of the Antarctic which held their interest and directed their attention, each one of which, related to a different facet of their relationship between their sense of self and their sense of place.

Across all three groups of respondents, the Wilderness and Physical Characteristics themes were most cited. This suggests that the physical landscape of Antarctica plays a strong role in shaping how people relate to and perceive the place, whether the respondents had personal experience there or not. The unique physical landscape of Antarctica is highly salient, especially amongst New Zealanders who have limited experience with snow and ice. This uniqueness contributes to the perception of Antarctica as a wilderness area, with participants from each group highlighting the need to leave some place in the world unaltered, allowing it to evolve on its own. This last observation matches well the definition of wilderness which emerged from Tin et al. (2009). They found that respondents defined Antarctic wilderness “as a place where *‘nature goes its own path without human intervention’*” (p.7). The importance of this wild space stems from several different reasons. For some, it is for the opportunity it offers to experience something unlike anything else on earth. For others, it is for the global environmental services supported by the continent. And for yet others, it is simply for the hope it symbolises for the survival of humanity on the planet. Specific physical features were also commonly listed as aspects of respondents’ sense of Antarctica, whether they had experience it or not. These varied from flora and fauna to climatic events, from topographic features to specific places on the map. For those with no experience in Antarctica, these facts were usually listed first, helping to locate the respondent within their imagination and set the scene for further aspects to emerge. It may also reflect the fact that these are often the most commonly used symbols in media and other information sources to represent Antarctica. For respondents with experience in Antarctica, the physical characteristics were used primarily to describe their experience on the continent.

Once again, this places the individual within the environment. Whatever the reasons individuals had for identifying the physical and wilderness qualities of Antarctica, taken together they demonstrate the importance the physical landscape plays in shaping perceptions of this remote and unusual environment.

A History theme was identified in all three groups of respondents. This suggests a role for the past in shaping the perceptions of the present and linking individuals' identities into the ongoing story of Antarctica. The theme arose from the mention of various different aspects of Antarctic history; from the heroic era of Shackleton and Scott to the Trans-Antarctic Expedition of Fuchs and Hillary, or from ancient Gondwanaland to the more recent Erebus disaster. For all respondents who identified this theme, the inclusion of historic elements in their perception of Antarctica highlights the narrative nature of place. The Antarctica they know today is shaped by the past stories of transformation and encounter. For those participants with no experience in Antarctica, historic events both sparked their imaginations and provided real connections to an otherwise distant place. The latter is evident in respondents pointing out the use of local ports for staging Antarctic expeditions and the national connections through Sir Edmund Hillary and the Erebus disaster. For respondents with experience in Antarctica, the inclusion of history in their sense of Antarctica is very similar. While all the same topics were touched on, the majority focused was on their personal experiences at the historic huts or on the historic scientific record available for their research. Both of these revolve around placing the individual not only in place, but also into the ongoing story of Antarctica. For both sets of respondents, the history theme suggests the importance of locating oneself within the narrative of place as part of gaining an understanding of that place.

The Future theme is a further example of this. Respondents across all three groups focused on the changing environmental conditions associated with climate change and the perceived threat to the Antarctic environment. The difference between those with no experience and those with experience focused on the ability to be able to do something about it. This is most likely due to the majority of participants with experience being scientists with an awareness of climate change and how their work might link in with it. Others, not involved with climate change, looked at the work as an important part of

preserving the continent for both future scientists, visitors, and the environment itself. Again, individuals located themselves within the developing story of Antarctica, here seen as a place which can “tell us something of the past to help us make decisions about the future” (5:09, S1910). However, for those without direct experience in Antarctica, this theme is expressed through the global impacts of a changing climate. The majority of these were focused on the negative changes, with a few respondents identified positive changes such as uncovering a new landmass on which to live. For those respondents with direct experience, it is the concern for the self, others, and the planet which underlies this theme and drives the potential direction the story of Antarctica might follow (Steel and Neufeld, 2011; Neufeld et al., 2014).

Discussions with respondents who have direct experience in Antarctica transformed two themes from broad topics to more specifically focused aspects of the place. Taking the Current Use theme to a Science/Workplace theme and the Danger theme to a Challenge theme suggests that individuals with experience in a place see themselves as a part of that place definition. This emplacement of self-as-scientist (or support) within the sense of place illustrates the link between their sense of identity and their sense of place. This relationship is evident in both directions, with identity shaping how the environment is perceived and the perception of the environment shaping an individual’s sense of identity. One’s identity appears to influence the manner in which individuals interact with and understand their environment, whether as a scientist, a member of base staff, a heritage conservator, or a field assistant. This was evident when respondents spoke of their location, the types of interactions they had with the environment, and the purpose they had in going there. Each of these shapes the interaction one has with an environment and influences the environmental information that is received. In the opposite direction, the environment also demonstrates a certain influence on one’s sense of identity, most often through the challenges individuals perceive in it. For respondents with no experience in Antarctica, these influences are only seen as potential and have little impact on an individual’s sense of self as they are derived from second-hand sources of information. The dangers reported from the environment are associated mostly with the weather and are therefore those which are reported back as part of individual’s perception of place. For those with experience in Antarctica, the

environmental impact on their sense of identity and, connected to it, of place, arises from the encounters and challenges faced by individuals whilst there. Respondents described challenges associated with working, socialising, and simply living in such an extreme environment. For them, the positive outcomes reached by overcoming the difficulties put forth by the environment outweighed any possible negative outcomes they could have faced. The challenges faced by individuals in Antarctica influence the manner in which they view themselves and their relationship with a place, and the meaning they make of it.

A similar influence of environment on sense of identity is seen in the Motive Force theme. Some respondents with direct experience highlighted instances where the environment exerted motivational force on their personal identity, thus shaping their relationship with the place. In line with Shamai's (1991) statement that a "person is connected to place and is shaped by it" (p.355), respondents felt their experience in Antarctica helped define their self-perceived identities and the paths they followed in the rest of their lives. Just over one-third of respondents with experience in Antarctica expressed ways in which the continent influenced their sense of identity. This suggests that, for some, their sense of place is linked to feelings of belonging to, and connection with, Antarctica and their experiences there.

Belonging, as part of sense of place, also arose in the Community theme raised by respondents with experience in Antarctica. Just over half of respondents identified some aspect of being a part of a specific community as an important aspect of their perception of Antarctica. While the majority of these focused on ideas of exclusiveness and privilege, some respondents also referred to the wider global community and their perceived responsibilities as Antarctic ambassadors. The idea of community raises not only the issue of belonging as an important part of sense of place for Antarctica, but also responsibility for protecting that place.

The Home theme, raised by only a few respondents with direct experience, demonstrates a deeper personal integration with place than that identified in either the Community or Motive Force themes. Similar to both of these latter themes, ideas of personal identity are bound up in perceptions of place, but at a more intimate and personal level. The respondents who displayed this theme had numerous repeat experiences with Antarctica and had integrated the place deep into their personal sense of

identity. This theme goes further to support the role one's sense of identity, through social connections, work, and lifestyle, plays in shaping sense of place.

The themes described above demonstrate how individuals perceive not only the Antarctic, but also their place within the story of the place. The most common aspect touched on being individuals' senses of identity. Who they see themselves as plays a huge role in determining the information they search for and remember, the experiences they seek, and the manner in which they bring that knowledge and experience together. This was observable in respondents with no direct experience in Antarctica, as well as those with experience. For those respondents with no experience, a greater personal interest in, or personal connection to, Antarctica led to a more complex sense of Antarctica, with greater number of themes identified and a better integration of these ideas or themes associated with place. For those with direct experience, there was a positive correlation between length of time in Antarctica and the complexity of individuals' senses of place. Although a higher level of complexity does not necessarily indicate increased intimacy with a place, it suggests that an increased interest tends to result in a more integrated understanding of a place. It also suggests that as individuals become more interested or invested in a place, either through work, family, friends, or personal interests, they bring it into their sense of identity. This can lead to a more complex understanding of that place as other ideas are sought and knowledge grows.

#### **6.1.5 Theory on how we sense extreme and unusual environments**

*The concept of place – a portion of land/town/cityscape seen from the inside, the resonance of a specific location that is known and familiar. Most often place applies to our own “local” – entwined with personal memory, known or unknown histories, marks made in the land that provoke and evoke. Place is latitudinal and longitudinal within the map of a person's life. It is temporal and spatial, personal and political. A layered location replete with human histories and memories, place has width as well as depth. It is about connections, what surrounds it, what formed it, what happened there, what will happen there.*

- Lippard, 1997, p.7

This description of place reflects all the aspects that have emerged through my research into how New Zealanders attach meaning to Antarctica. Identity, environment, culture, history, future potential, as well as the inward and outward connections, all come together for each of us in shaping our understanding of the place we call Antarctica. But can this knowledge take us further? Are we able to pull from this a theoretical framework on how people in general relate to and perceive extreme and unusual environments, and the role experience plays in shaping this relationship?

In this section, I propose one such model. It goes towards describing the structure underpinning sense of place in Antarctica. I will explain how generalisations may be applied to take this model beyond Antarctica and relate it to other extreme and unusual environments, such as the deep sea or outer space. However, I will also suggest some limitations to the application of such a rigid framework for predicting and describing something that is, fundamentally, a very idiosyncratic and subjective thing.

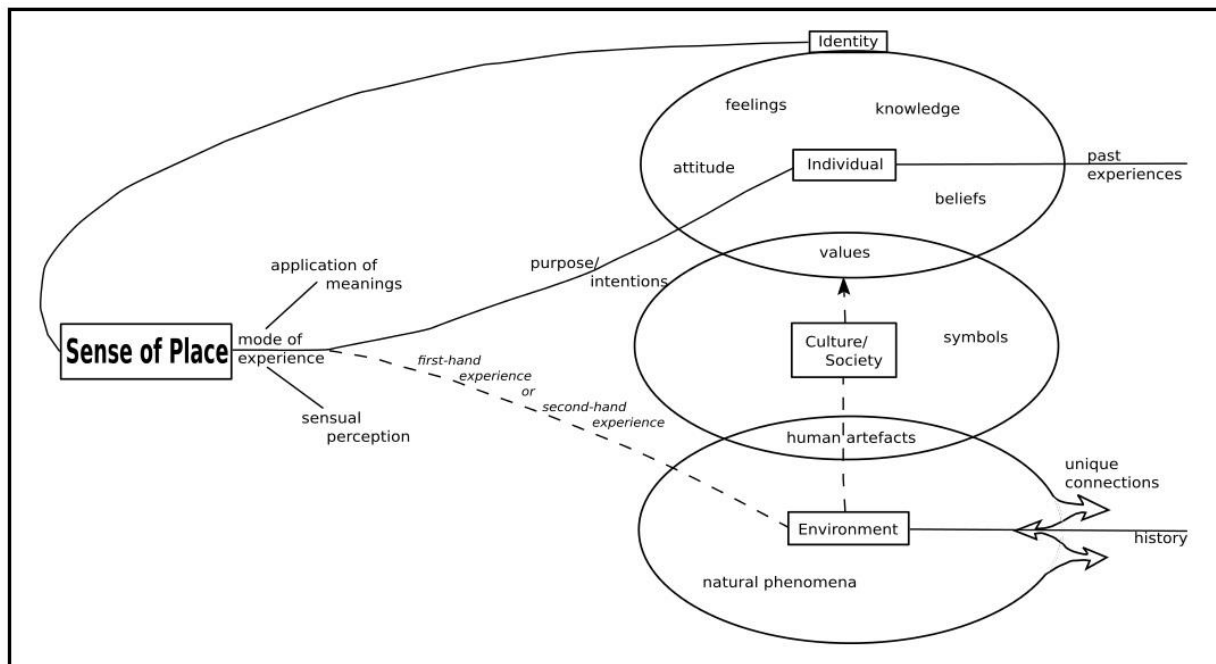


Figure 6.1 Proposed model for sense of place development (developed from Tuan, 1977).

The proposed model (see Figure 6.1) builds on a number of the existing models discussed in the second chapter (theoretical groundings). It draws mainly on the works of Tuan (1977) and his map of the interaction between individual and environment, with length of experience playing an important role in the development of sense of place and

the three-poled maps of Gustafson and Sack. An individual's identity is made up of their knowledge and past experiences, their beliefs, attitudes, feelings, as well as the values they hold and the communities to which they associate themselves (Relph, 1976; Tuan, 1977; Pred, 1984; Hay, 1998; Gustafson, 2001; Stedman, 2002; Manzo, 2005). These values and communities are directly influenced by the culture or society to which they belong. This culture also influences the environment through the introduction of cultural artefacts such as buildings, management practices, and historic links. The environment also contains natural phenomena, as well as a set of unique connections, both within its boundaries and beyond. These connections, whether they are known or not, can shape and influence the environment and therefore any sense of place related to it. The interaction between individual and environment, be it direct and personal or indirect and through others, provides the sensual information and the opportunity for meaning to be applied to the place. The meanings applied arise from the individual's knowledge, attitudes, beliefs, values, past experiences, and feelings, as well as specific purposes or intentions that influence how they interact with and perceive the environment. Individuals are also influenced by cultural and social norms, as is the environment with which they are interacting, with cultural symbols and artefacts shaping the landscape. The mode of experience, including the length of the encounter and the manner in which it is experienced (i.e., directly or indirectly) also plays a role in shaping the resulting sense of place. This sense of place, while continually developing and changing, is integrated into the identity of the individual as the ongoing development of a personal story.

This model is for specific encounters with an environment. As the arrow indicates, each encounter has the potential to influence and shape the self-identity of the individual (Lippard, 1997; Shamai, 1991; Relph, 1976; Pred, 1984). This in turn will influence future encounters with the same environment and elsewhere. Each successive encounter with the same or other environments also has the potential to develop a deeper, more complex sense of place, with a greater variety of meanings that inter-relate and occur simultaneously (Ryan and Cave, 2005; Hay, 1998; Sack, 1997).

This is especially pertinent to extreme and unusual environments due to the limited interaction individuals are able to have with the place. The biggest differences when applying this model to these types of environments is the mode of encounter and

the role of culture and society in shaping perceptual information. Due to the inaccessibility of most extreme and remote environments, indirect encounters are by far the more common manner in which individuals experience them. This means that the information that they are receiving about an environment has already been filtered by another individual or group of individuals. The source will determine what information is passed on and in which manner. Although the stories shared by a friend may focus on their own personal interests, the information found in a museum exhibit will have been researched and summarised for the purpose of passing on specific facts deemed interesting or important by the designer of the exhibit. Examining the purpose behind the source can illuminate the reasons behind why particular stories were chosen and others were not. However, a certain personal interest or prior knowledge is required for individuals to pursue this.

Other impacts can arise from how that information is passed on. Sensual stimulation is limited when one is unable to experience an environment first-hand, but there are a variety of ways in which our different senses can be stimulated, including through photos, video and sound recordings, and certain physical simulations. Multiple senses can be stimulated at once, leading to a unique representation of a place. However, this representation can only ever be partial, limited by the choices made regarding what is shown and what is left out (Webb, 2009).

Another aspect of first-hand experience is the psychological presence of an individual in place. Self-awareness in place is an important difference between first- and second-hand experiences of an environment. Based on both the perceived cultural value of one's experience in that place and the personal value of having had that experience, the awareness of being-in-place is a unique aspect of sense of place. This is largely due to the investing of one's self in place, through work or leisure, leading to the integration of life story with place story. While integration with place can occur over long-distances due to familial connections or personal interests, it is far more likely to occur when an individual has spent part of their life directly experiencing an environment.

The presented model attempts to explain how sense of place is developed in extreme and remote environments, examining in particular the role experience plays in shaping this. After examining 30 questionnaire responses and speaking to 54 individuals



about their perceptions of Antarctica, it is clear that the relationships people form with this place are as unique and individual as themselves. Based largely around the identity of the person in question, a sense of place develops over time and is greatly influenced by how one encounters the environment. The cultural and societal influences act on both the environment and the individual, and are more prominent in a purely second-hand encounter. Further research could be done in this area, to survey the variety of second-hand sources of information and examine how they influence a persons' sense of place.

## **6.2 Practical applications**

*If places are indeed a fundamental aspect of man's existence in the world, if they are sources of security and identity for individuals and for groups of people, then it is important that the means of experiencing, creating, and maintaining significant places are not lost.*

- Relph, 1976, p.6

Understanding how people perceive and relate to extreme and unusual environments, and particularly Antarctica, has multiple applications beyond the theoretical domain of academia. By examining how we learn about and relate to remote, and often fragile, places, we can develop more efficient and effective ways of ensuring they thrive in the future.

### **6.2.1 Communication**

Understanding how people learn about and perceive a remote and unusual environment can help direct communicators in ensuring their message is successful in reaching their target audience. The results of this research suggest that a communicator could most easily identify their target audience based on the cultural or social group to which they associate themselves. While there will be a wide variety of individuals within the group, the general symbols recognised and associations made will likely be consistent. Another important aspect to consider is the prior knowledge held by the individuals within a group. Again, some variation will be inevitable, but awareness of the resources accessible to and the general background of the types of individuals within the group can

allow communicators to tailor their message to the appropriate knowledge level ensuring their audience is interested in what they have to say. Communicators must also understand that a person's sense of place is an ever evolving thing and outside, often unrelated, information can have an impact on their perception of a place. This means that they must maintain a certain awareness of how the meanings of certain symbols may be evolving or changing and take that into account when creating their message.

### **6.2.2 Tourism**

One group interested in creating specific messages, and understanding perceptions across a variety of audiences is tour operators. For tour operators, creating a saleable destination image for their clients is just as important as understanding their clients pre-existing expectations to ensure their trip is a success. The creation of a successful destination image is similar to the creation of a successful message as discussed above. It relies on knowledge of the target audience and the type of encounter they are likely to seek out. An added layer relates to the deliverability of certain experiences on a trip. It is, of course, important that the image sold to potential customers is one that can be delivered to ensure satisfaction. The research in this thesis suggests that to ensure this is achieved, it should be made very clear which types of encounters and experiences one might expect to have on a trip. This leaves the meaning-making up to the customer and allows them to interpret their own experiences in a manner which fits within their personal sense of identity.

### **6.2.3 Policy development**

Antarctica is unique in a multitude of ways, not least of which is the manner in which it is managed. The Antarctic Treaty System is made up of 50 nations who have all signed the Antarctica Treaty (1959) and the succeeding documents (including the *Protocol on Environmental Protection to the Antarctic Treaty* (1998), CCAS (1972), and CCAMLR (1980) agreements) in order to manage Antarctica "in the interest of all mankind" (*The Antarctic Treaty*, 1959, p.2). However, for this to work, one must understand what it is that mankind wishes for. By learning how people relate to and understand Antarctica, policy can be developed to meet the requirements of humanity.

While Antarctica means many things to many people, there are general themes and trends that can be identified as important to the vast majority of people. This research suggests that for New Zealanders, many of whom may never experience the continent themselves, Antarctica is just as important for the hope it represents as for the scientific and resource potential it carries. This hope is based around the ideas of preservation, cooperation, wildness, and the future. Combine this with the scientific value also identified by many of the respondents, and one can establish a fairly clear idea of how New Zealanders would like the Antarctic to be managed. By incorporating the desires of the public into the policy mandate, the government would be truly representing their citizens. An important part of this process is the gathering and integration of required information. But with research such as this being conducted around the world, there are fewer excuses for governments not to be aware of the desires of their citizens. Antarctica has set a precedent already with its unique governance system. By including the perceptions of the public at large, we can ensure Antarctica truly is preserved for all mankind.

## **7.0 Conclusion**

This study set out to explore the concept of sense of place and the role experience plays in determining an individual's perception of place. Examined within the context of New Zealanders' perceptions of Antarctica, this research seeks to fill a gap in the existing sense of place literature which focuses on perceptions based only on first-hand encounter and residence. In order to do this, the study focused on answering three questions:

1. What is New Zealand's sense of Antarctica?
2. Do New Zealanders with different experiences and connections to Antarctica have different senses of place?
3. Does a New Zealander's sense of Antarctica relate to their sense of national identity?

Each of these questions will be answered in the sections to follow, pulling on data gathered throughout the research. This will be followed by a section outlining the implications of these findings on existing theories in the field of sense of place research. A brief look at how the findings can contribute to other fields will follow. Finally, several recommendations for future research will be made, highlighting some of the questions found throughout the study and interesting directions in which they lead.

### **7.1 Answering the big questions**

The main research findings are outlined in the two results chapters entitled Questionnaires and Interviews respectively. This section will synthesise these findings in order to answer the three driving questions of this thesis.

1. What is New Zealand's sense of Antarctica?

Antarctica is a place of many different meanings. The diverse range of themes that emerged from this research demonstrates the range of ways in which people relate to and understand Antarctica. While individual senses of Antarctica varied depending on the person, there was a common thread throughout all respondents, and that was viewing Antarctica as a place of hope. Be it as a place to find a solution for climate change or a blueprint for international collaboration, whether it was for the resources it might offer or the sanctuary it is seen to provide, Antarctica was seen as a place where humanity might find answers.

2. Do New Zealanders with different experiences and connections to Antarctica have different senses of place?

At the heart of our sense of place is how we have integrated that place into our sense of self, and it is through both experience and connection that this can occur. For individuals without any experience in or connection with Antarctica, their sense of place tended to be broad and very general. They imagined a place drawn together from bits and pieces of their favorite books, television commercials, and news reports in the media. For individuals with no direct experience, but some level of personal connection, be it through family, friends, or personal interest, their sense of place tended to be more focused, but still very general. Their connection providing an increased level of knowledge about their area of interest, or their family or friend's own experiences, as well as the more general sources of information available as mentioned above. Finally, for individuals with direct experience, there is an automatic personal connection with Antarctica as one's life story is wound into that of Antarctica's, and their sense of place is now constrained to the limits of the reality of their own experience there. Their sense of place is made up of the details of their experiences, which can either build upon previous ideas or eliminate them altogether depending on their proven validity. All of this suggests that the relationship between person and place is built up through encounter, but is not reliant on it. Rather, it relies most strongly on the identity of the individual and the connections they create themselves.

3. Does a New Zealander's sense of Antarctica relate to their sense of national identity?

National identity was far more important for individuals' sense of Antarctica when they had no direct experience there. It provided a personal sense of connection for those without any other sense of connection, through which they could feel a part of the Antarctic narrative. This was most commonly observed via the historic achievements of Sir Edmund Hillary and the modern scientific research going on today. Both of these narratives allowed New Zealanders to connect themselves with Antarctica through their sense of national identity and pride.

## 7.2 Theoretical implications

The theoretical contributions of this research rest largely on the model developed in Chapter Six. This section will look at how this model fits within the existing theory, how it might affect further understanding in the subject area, and who it agrees and disagrees with.

As mentioned in Chapter Six, the model builds on the models of Tuan (1977), Gustafson (2001), and Sack (1997). Using the developmental design and trifecta base respectively, it develops the idea of sense of place around the individual rather than the place itself, allowing for a plurality of senses of place to be developed around one location. Based on both phenomenological and empirical findings, the model brings together both experience and knowledge in an attempt to demonstrate how they interact to create sense of place. In doing this, the model also shows how narrative, or process, plays an important role in shaping sense of place, similar to Pred (1984) model of place as historically contingent process. He suggests that “sense of place [is] not [...] something that stands on its own, but as a phenomenon that is part of the becoming of individual consciousness” (p.292). Sense of identity and sense of place are irrevocably intertwined and work to define one another.

Sense of place has two apparently divergent groups of theoreticians, those in the social constructivist camp and those in the sensual encounter camp. The model, while based on experience and knowledge, does not limit that experience to first-hand encounters. This is similar to how many of the social constructivists define place, who suggest that sense of place is built using “culturally meaningful symbols and then [acts to] reify it” (Greider and Garkovich, 1994, p.6). However, the model then goes beyond this to describe the role direct experience plays in transforming previously held ideas and images, into a more defined sense of place. It draws a spectrum between the ideas of constructivism and sensual encounter, suggesting both play a role in how sense of place is developed in extreme and unusual environments where first-hand encounter is not always a possibility.

While the model draws on many existing theories, it does not always support all aspects of previously presented theory. Although Tuan’s (1977) theory provides the structural base on which the model is built, it is Gustafson (2001) with whom the model

is most in agreement. The triumvirate of self, others, and environment establishes the base upon which sense of place is built and emphasises the varying import each of these can have on a sense of place depending on the circumstances. The model also supports the work of Massey (1991), in suggesting the importance of connections, both within and without a place, in defining it as being particular. And while the model draws on the triumvirate put forward by Sack (1997), it does not follow in the belief that sense of place is a place-based phenomenon, rather suggesting it as an individual-based one. The model also rejects the Seamon (1979) theory of place-ballet, which suggests that sense of place is constructed from the routines and movements of body-subjects within a space. The individual-based and plural nature of sense of place as proposed in this model places it in definite support or opposition to many models. However, the range of experiences used to create the model ensures there is also a certain amount of partial support for certain theories already out there.

### **7.3 Recommendations for future research**

Sense of place is a broad and multi-faceted area of inquiry, with many different fields interested in it. Even when taken within the context of extreme and unusual environments there are a wide variety of questions still to be explored. Each of the questions below extends on areas not touched on in the current research.

1. What influence does cultural background/grounding have on sense of place development in Antarctica?

As discussed earlier, sense of identity plays an important role in shaping sense of place, so one would also imagine that cultural background might influence how an individual created their sense of Antarctica.

2. Do individuals with limited sensual capacity (e.g. blind, deaf, etc.) develop sense of place similar to individuals who never experience a place first-hand?

As an extension to the extreme and unusual environment theme, one could look in the other direction at individuals with limited sensual capacity and examine whether their physical limitations influence their sense of place in the same way a lack of experience influences a fully sensed individual.

3. How does sense of place development differ between Antarctica and outer space?

An examination into whether other extreme and unusual environments influence and shape sense of place development in the same way as Antarctica.

4. How can tourism operators/communicators/policy developers meaningfully incorporate ideas of sense of place into their package development/communications/policies?

Being able to meaningfully incorporate research findings into real world issues is the goal of most researchers. This work could examine decision makers, the processes they use to incorporate findings into their procedures, and how those processes could be improved.

Contrary to the commonly held notion that Antarctica matters only to those New Zealanders who have been lucky enough to travel there, this work suggests that this is simply not true. But more than that, it suggests that it matters for very different reasons to all those who do care. Regardless of their senses of place, New Zealanders view Antarctica with a sense of hope. And just as sense of place is fundamental to our daily lives in helping us understand and relate to our surroundings, so too our sense of hope in Antarctica should drive the decisions we make that will determine its future.



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## Appendix 1 - QUESTIONNAIRE

### A Place on the Ice

*The first part of this questionnaire will look at how you relate to and view Antarctica. This section is not about how much you know about the continent and there are no right or wrong answers, it is simply to gain a better understanding of how individuals view the continent.*

1) Over the next few minutes think about what comes to mind when you think of Antarctica. Write down any words or phrases that come to mind as you do this.

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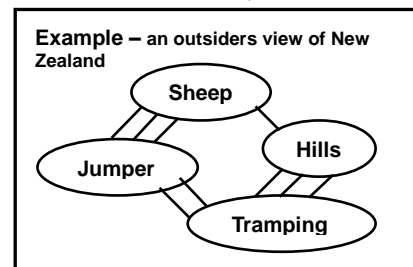
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2) In the space below arrange the words and phrases you listed above and connect them as you think they go together. Use 1, 2 or 3 lines to show the strength of the relationship between words or phrases (3 being a strong connection and 1 a weak connection).



3) Pick one or two of the words or phrases that are most strongly associated with Antarctica for you.

Describe how those words or phrases came to mean Antarctica.

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## QUESTIONNAIRE

## A Place on the Ice

*The next section will look at the different moods Antarctica can evoke. Many different people can feel many different things for one place, the purpose of this chart will be to learn about the diversity and complexity of New Zealanders relationship to Antarctica.*

4) Below is a list of feelings followed by a line. Read each feeling and mark on the line how strongly you feel Antarctica represents these feelings. If you do not agree with a feeling make a mark at the far left side of the line under “Not at all”.

Antarctica is . . .

	Not at all	Extremely
Alive	[-----]	
Monotonous	[-----]	
Frenzied	[-----]	
Dull	[-----]	
Stimulating	[-----]	
Tranquil	[-----]	
Uncomfortable	[-----]	
Calm	[-----]	
Exhilarating	[-----]	
Serene	[-----]	
Dreary	[-----]	
Interesting	[-----]	
Unstimulating	[-----]	
Beautiful	[-----]	
Unpleasant	[-----]	
Boring	[-----]	
Pleasant	[-----]	
Tense	[-----]	
Slow	[-----]	
Forceful	[-----]	

## QUESTIONNAIRE

## A Place on the Ice

*Finally, we would like to look at how you know Antarctica. This last question will allow us to see if different ways of experiencing a place have an influence on what a place means.*

5) How did you develop your understanding of Antarctica? (tick all that apply)

I have seen pictures of Antarctica in ads and in  
commercials .....[ ]

I have read about Antarctica in the newspaper or heard about it on the radio or  
television. .... [ ]

I have seen movies about Antarctica ..... [ ]

I have attended public talks on Antarctica .....[ ]

I have been to museum exhibits about Antarctica ..... [ ]

I have been to an Antarctic centre. ....[ ]

I have learned about Antarctica in school. ....[ ]

I have heard about Antarctica from friends and/or family who have been there. .... [ ]

I have been to Antarctica ..... [ ]

- for how long: \_\_\_\_months \_\_\_\_days

- what was the nature of your stay/visit (if it was a job, please include  
your job title):

Other (please  
specify):\_\_\_\_\_

### **Personal Information**

Sex: M [ ] F [ ] Age at last birthday: \_\_\_\_years Nationality:\_\_\_\_\_

In which town, city or region of New Zealand do you live?\_\_\_\_\_

How long have you lived in New Zealand?

Born here [ ]

Moved here \_\_\_\_ months \_\_\_\_years ago

Highest level of formal education: No Qualification [ ]  
Below level 3 or 4 [ ]  
Level 3 or 4 certification or equivalent [ ]  
Post-secondary qualification (not University) [ ]  
Bachelor degree [ ]  
Post-Graduate and/or Honours degree [ ]  
Masters degree [ ]  
Doctorate degree [ ]  
Not elsewhere included (please specify):  
\_\_\_\_\_

Total Personal Income:	Zero Income	[ ]	40,001 – 50,000	[ ]
(12 months ending	1 – 10,000	[ ]	50,001 – 60,000	[ ]
March 31, 2009)	10,001 – 20,000	[ ]	60,001 – 70,000	[ ]
	20,001 – 30,000	[ ]	70,001 – 100,000	[ ]
	30,001 – 40,000	[ ]	100,001 or more	[ ]

(see over)

## QUESTIONNAIRE

## A Place on the Ice

*Thank you for taking the time to complete this survey. Your input is a valuable contribution to my research and I appreciate the effort it takes to fill in these questions.*

*In addition to this questionnaire, I am looking for people interested in participating further. If you are interested, please write a short letter or story in the space below, explaining what Antarctica means to you as an individual. Feel free to include extra pages if you need more room than is provided below.*

## Appendix 2 - Interview Questions

Date\_\_\_\_\_

Sex\_\_\_\_\_

Age\_\_\_\_\_

Home\_\_\_\_\_

Occupation\_\_\_\_\_

What does Antarctica mean to you? What do you think of when you think of Antarctica?  
This can be words, or ideas, or memories, whatever comes to mind. Why these words/phrases/etc.?

\_\_\_\_\_

Can you describe how you have experienced Antarctica, if at all?

\_\_\_\_\_

*If experience then ->* Did your experience change how you view or perceive Antarctica?

\_\_\_\_\_

Do you remember the first time you encountered Antarctica? Can you describe it?

\_\_\_\_\_

Do you feel like you have a 'connection' (however you choose to define it) to Antarctica?  
If so, can you describe that connection?

\_\_\_\_\_

Is Antarctica different from any other place in the world? Why or why not?

\_\_\_\_\_

Is Antarctica an important part of New Zealand? If so, how?

\_\_\_\_\_

Additional comments:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

File name:\_\_\_\_\_

### Appendix 3 - Interview protocol and questions for In Situ interviews

- A. Record date, place, and name of participant and interviewer.
  - B. Thank participant for taking part.
  - C. Reminder of purpose of study; reminder of rights as a participant.
    - a. Obtain explicit consent to use quotes. If no consent given, note this orally on the recording and in the interview notes.
  - D. Ask if s/he has any questions about the study of participation before you begin.
- 

#### BEGIN QUESTIONS

- 1. **[SENSE OF PLACE]** We'll start with a broad question. What does Antarctica mean to you? (*probe for **sense of place**; meaning in features reported*)
  - a. Has your perception or idea of Antarctica changed over time? Was it different from what you expected? Has it changed from previous visits?
  - b. How do you tell people back home who have not been here what it is like? Are there aspects of Antarctica you cannot communicate?
- 2. **[ROLE]** We've discussed your view of Antarctica, now let's place you into it. What is your role here?

**[DEFINE]** The next part of this interview deals with environmentally-related behaviours. These are **any actions that have a direct impact, positive or negative, on the natural environment.**

- 3. **[ROLE IMPACT]** In your role here, what environmentally-related behaviours do you have? What do you do that has a direct impact on the natural environment?
- 4. **[SCENARIO 1]** Suppose, for a moment, that you are at [your worksite or field camp] and you come across what looks to be a spill of clear liquid. Tell me how you would decide what you needed to do about it? What steps would you take? (*probe for **decision path** and **proximal/distal influences***)
  - a. Why would you do that? (*probe for **values/beliefs***)
  - b. What sort of loss would this cause for you/others/the environment?



5. **[SCENARIO 2]** Tourism activity in this part of the continent is reasonably low (approximately 300 tourists) compared to the Antarctic Peninsula which has approximately 20,000 visitors a year. Suppose that in the next 10 years, a similar number of people visited the Ross Dependency each year. How would you feel/respond to this?
  - a. Why would you feel/respond this way? (*probe for values/beliefs*)
  - b. What sort of loss, or gain, would this cause for you/others/the environment?
  - c. Would you feel/respond in a similar way if this increase was in the number of scientists rather than tourists? Why is that?
6. **[LIST]** Finally, if you were asked to write a list, what aspects/elements of the Antarctic would you wish to keep the way they are? For what purpose (future generations/the environment/other scientists)?
7. **[OTHER DATA]** That completes our set of questions. Was there anything else you would like to add that you think might be relevant to what we've discussed?
8. **[QUESTIONS]** Do you have any questions for us about our study at this time?

END QUESTIONS

**Thank participant again.** Remind him/her that we'll be around for a while and if s/he comes up with anything else they may want to add or delete, then just let us know.

## Appendix 4 – Questionnaire Word Analysis

Respondent Identified Words	Initial Classification	Theme
Great food source in the sea	Fishing	Current Use
Fisheries		
Andrill programme	Research	
Frozen ecological history		
Hercules planes		
Research science		
The worlds largest refrigerator holding mystery of world evolution		
Wildlife research		
Scientists		
Aircraft		
Global warming		
Helicopters		
Highly touched (industry engineering)		
Research		
Scientific		
Cruise ship tourism	Tourism	
Photography		
Tourism		
Merciless		Danger
Care		
Currently uninhabitable		
Hardship		
Harsh		
Plane crash		
Snow blindness		
Survival		
Tragedy		
Unhospitable conditions		
Despoliation/pollution	Fear	Future
Food chain for fish depleting		
Exploiters		
Pollution		
Global warming making it more habitable	Might be	
Held in trust in perpetuity	Preserve	
Care		
Future generations		
National parks		
Preservation		
Protection		
Reserve		

Responsibility	Preserve	Future
Sacred sanctuary		
Mineral potential	Resources	
Drilling		
Antarctic treaty system	Resources	Global Connections
Discovery – Dundee, Scotland		
Territories	Explorer	History
Amundsen		
Mawson		
Ponting		
Scott		
Shackleton		
Early exploration	General	
Early explorers		
Comradeship		
Exploration		
Explorers		
History		
Sleigh and dogs	NZ History	New Zealand
Massey Fergusson		
Erebus crash	Erebus	
Ed Hillary	Sir Ed	
A part of New Zealand	NZ	
Christchurch Antarctica Centre		
Icebergs floating in NZ waters		
NZ	Scott Base	
Scott Base		
Baleen whales	Animals	Physical Characteristics
Emperor penguins		
Humpback whales		
Leopard seals		
Maintain unique habitat		
Marine mammals		
Much wide life (sic)		
No polar bears		
Penguin colonies		
Penguins		
Plankton		
Plant and animal life		
Polar bears		
Sea lion		
Seals		
Whales		
Wildlife		
But very cold	Climate	

Cold	Climate	Physical Characteristics
Cold place		
Dry		
Extreme weather		
Freezing		
Frozen		
Harsh weather		
Katabatic winds		
Melting		
Ozone layer		
Snow storms		
Snowy		
Storm		
The birthplace of all wind current and ocean current for the world		
Very cold temperatures		
Wet		
White-outs		
Windy		
Antarctic Peninsula		
Bottom of Earth		
Erebus		
McMurdo Sound		
Mt. Erebus		
Queen Maude Land		
Ross ice shelf		
Ross sea		
South Pole		
Vinson Massif		
Wilkes Land		
A large mass of ice	Ice	
Snowy white continent		
The biggest source of fresh water		
White		
Ice		
Ice bergs		
Ice bound		
Ice flows		
Ice shelf		
Ice, acres of ice		
Icy		
Snow		
Darkness	Light	
Day		
Endless day		

Endless night	Light	Physical Characteristics
Long days		
Long nights		
Night		
Glaciers	Topography	
Great land mass		
Plains and mountains		
Polar caps		
Underwater		
Contradictory	Romanticism	Wilderness
Expansive		
Outerspace on Earth		
Sublime		
Unique		
A barren Iceland	Alienation	
Barren		
Extreme		
Formidable		
Isolated		
Isolation		
Lonely		
Primitive		
Rugged		
Unconquerable		
Uninhabited (by people)		
Vast		
Adventure	Adventure	
Adventurous		
Excitement unending		
Exciting		
A beautiful place	Beauty	
Awesome scenery		
Beautiful		
Beautiful landscape		
Beauty		
Breath-taking		
Calm		
Clean		
Glorious		
Great beauty		
Great scenery		
Holy nature		
Interesting		
Majestic		
Nature at its finest		

No dust	Beauty	Wilderness
Pristine		
Pure		
Purity		
Sculptured mass		
Serene		
Spectacular		
Teeming life		
The world as it should be		
Unspoiled		
Untainted by civilization		
Untouched		
World of life		
Last great wilderness	Fragility	
Stasis		
To maintain its pristine condition		
Vulnerable to exploitation		